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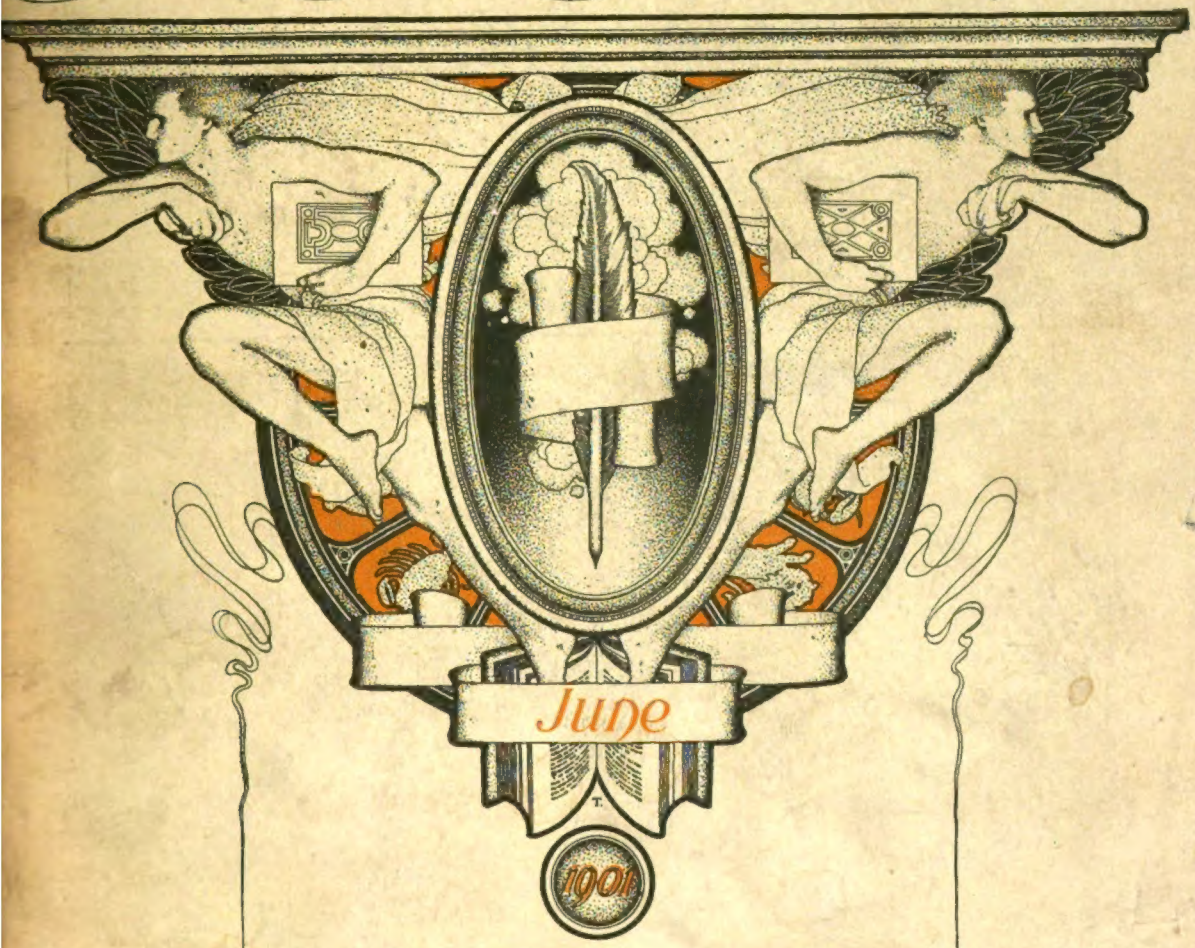

Alone up Mt. Katahdin
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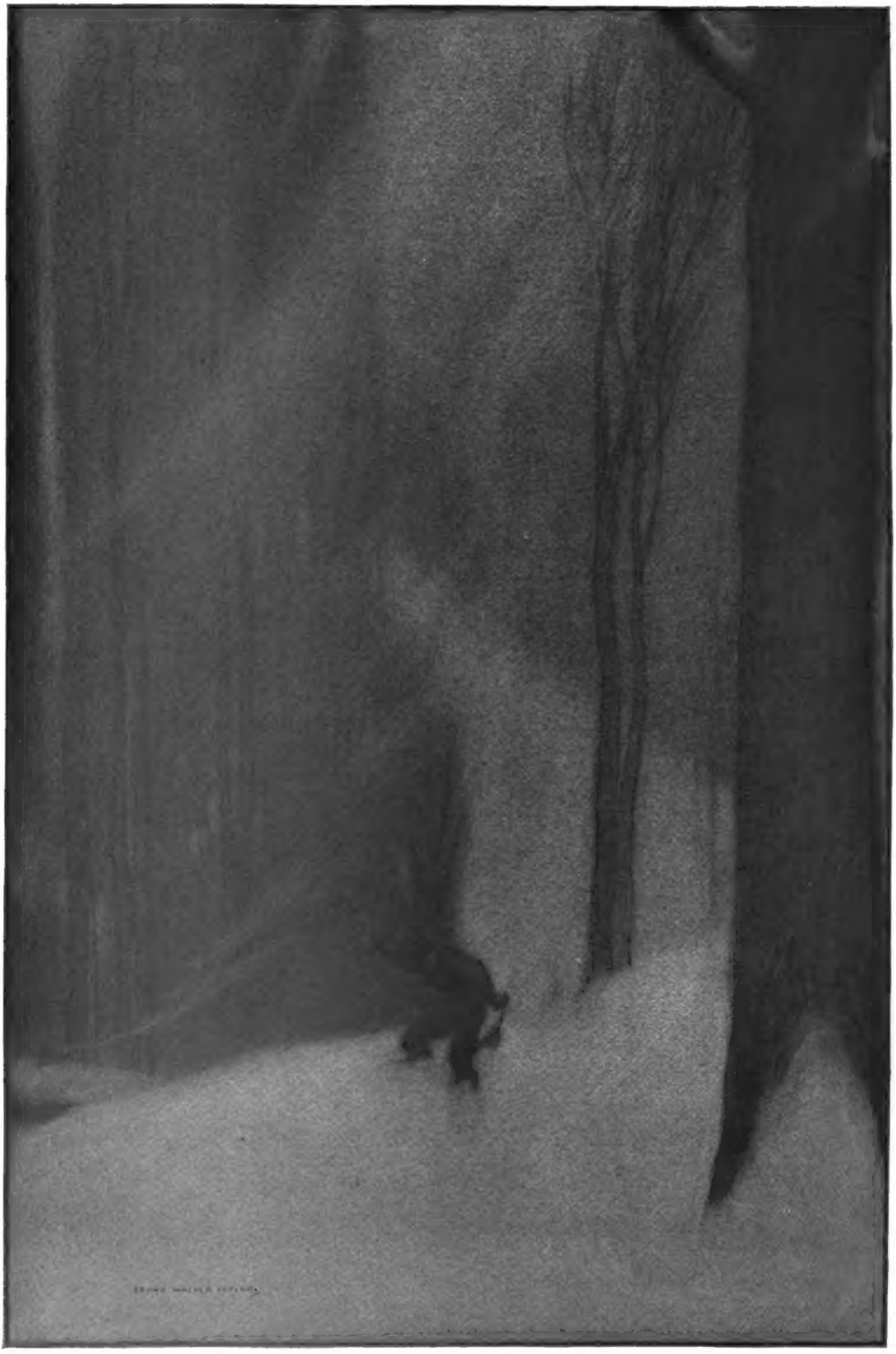

"HALLORAN, SEIZING HIS BAG, FLED UNSTEADILY TO THE EDGE OF THE TOTE-ROAD AND TURNED, WILD AND MALEVOLENT AS EVER."

"*Black Murchison*," *page* 561.

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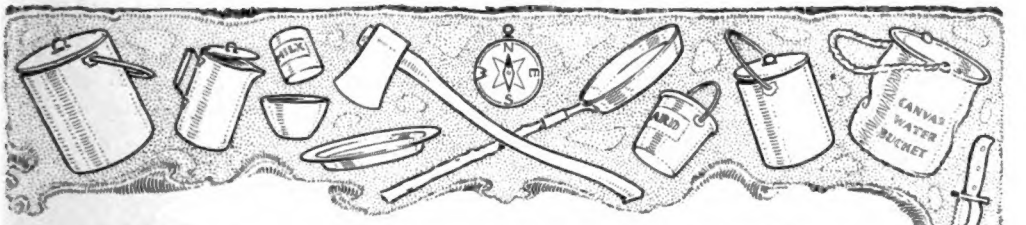
EVERYBODY'S MAGAZINE

VOL. IV. JUNE, 1901. No. 22.



ALONE UP MT. KATAHDIN

BY

A. RADCLYFFE DUGMORE

ILLUSTRATED FROM PHOTOGRAPHS BY THE AUTHOR

WITH A FEW INTRODUCTORY HINTS ON CAMPING WITH A TWO-LOAD OUTFIT.

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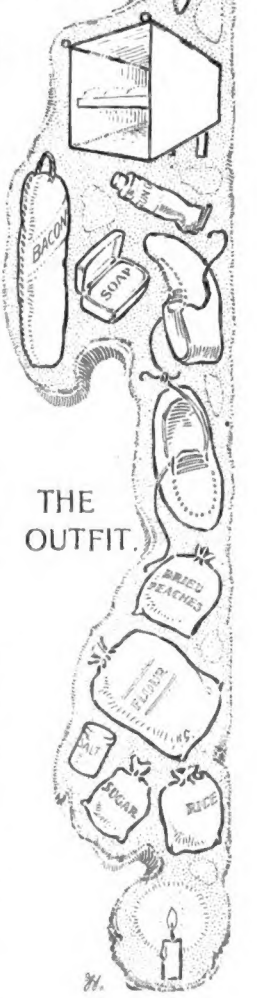
THE idea of camping alone in the woods strikes some people with horror, yet those who try it find that it has a peculiar charm. To describe one's feelings when the darkness first sets in is not easy. Everything is so solemnly quiet that it seems an act of sacrilege to make any noise, and the various duties of camp life are performed with the one thought of hiding one's presence from some invisible being. Occasionally fear takes possession of the solitary intruder upon Nature, and the blackness beyond the circle of the firelight becomes a land of forbidding shadows. It sometimes requires the utmost courage to walk but a few yards to the river's edge to renew the water supply, and a man goes about open-mouthed, listening for the coming of that which exists only in his overwrought imagination, and with a desperate longing for the companionship of a friend.

But with the coming of morning all such fears are forgotten in the delightful sense of complete liberty and independence. Now the quiet of the woods is as welcome as during the night it was feared, and the camper treads noiselessly, as he takes his way through the woods, watching the natural bird and animal life where man is rarely seen. To speak would be to separate one's self from all this. The absence of a human companion is now almost a relief.



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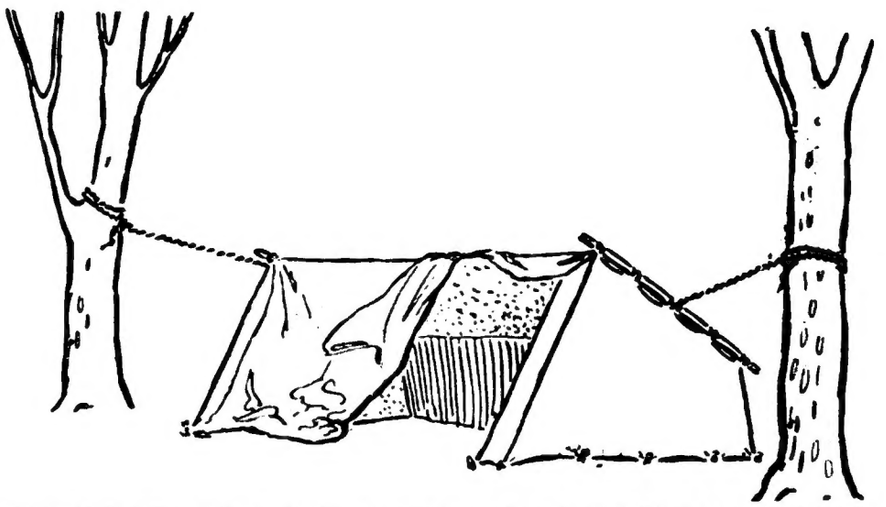
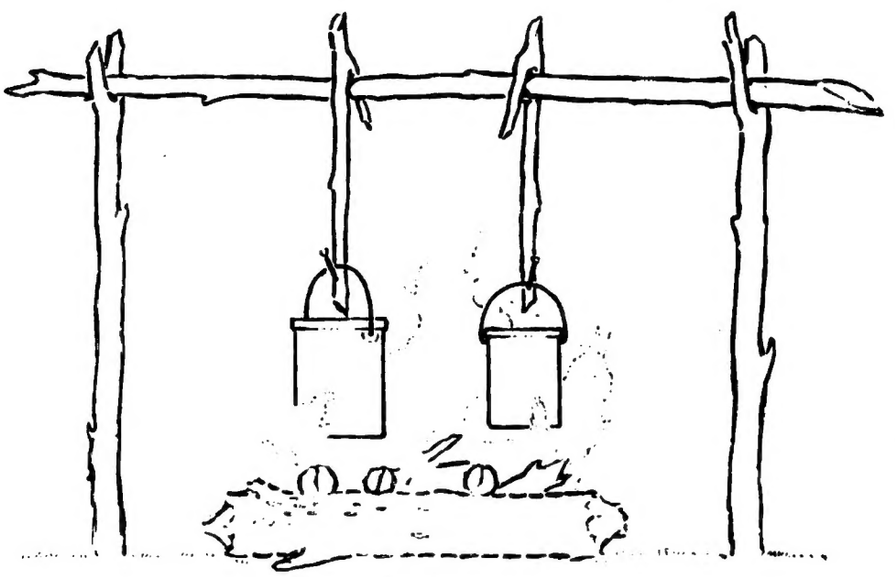
With meals to cook and eat, pots and pans to wash, wood to cut, and an endless procession of other things, the days pass all too rapidly. Moreover, the many objects to be seen must be seen slowly, if we would see them thoroughly. Each variety of flower, moss, or tree must be examined, while the antics of the busy red squirrel as he works, plays, or scolds, and the bird-life of the forest, create a fund of material so interesting to the lover of Nature. Then there is the evening meal to prepare—for the camper is blessed with a good and wholesome appetite—and after supper follows that greatest of all luxuries, the bed of sweet-scented balsam, beside which the feather-bed is but a sham and a pretence.

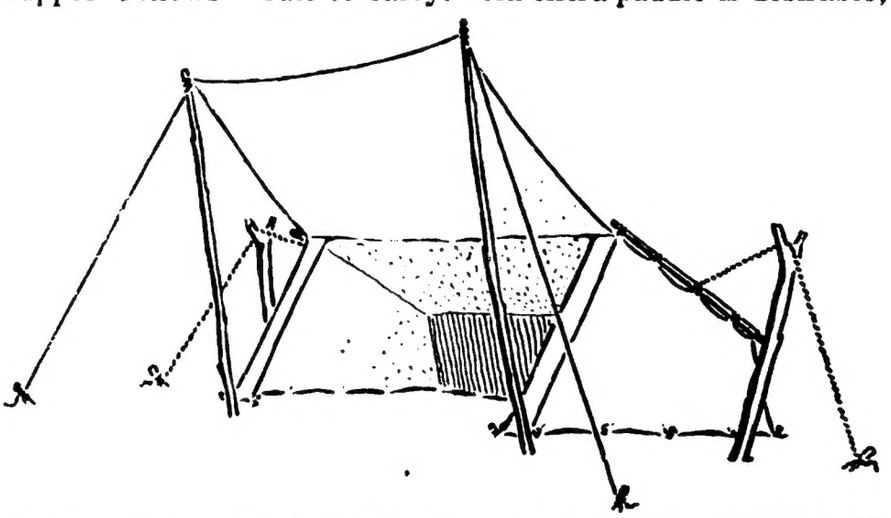


SHELTER TENT. THREE FEET HIGH, SIX FEET SIX INCHES LONG, AND FOUR FEET WIDE AT BASE.



CAMP FIREPLACE.

A little knowledge is far from dangerous for the amateur camper. He will find in Maine and Canada, owing to the endless waterways, many "portages" or "carries." Therefore nothing should be taken that cannot be conveniently carried; to make an outfit as light as is compatible with comfort, is a real science. One load (not counting the canoe, of course) is as much as a person should take, for if a "portage" is, say, two miles in length, that will mean six miles of walking, while another load would bring it up to ten, and that means a good half-day's work. The canoe (itself a load to one not used to playing "pack animal") should weigh not more than seventy-five pounds: on a bad trail this is quite heavy enough. It should be about fifteen or sixteen feet in length, and fitted with a cross-brace in the centre, without which it is much more difficult to carry. An extra paddle is desirable,



WHERE TWO TREES ARE NOT CONVENIENT, THE TENT MAY BE SUPPORTED BY FORKED STICKS, OVER WHICH THE ROPE IS PASSED, AND FASTENED DOWN BY MEANS OF A PEG. SHOWING FRONT FLAP RAISED.

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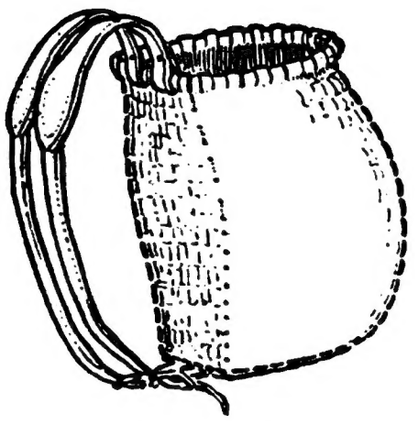
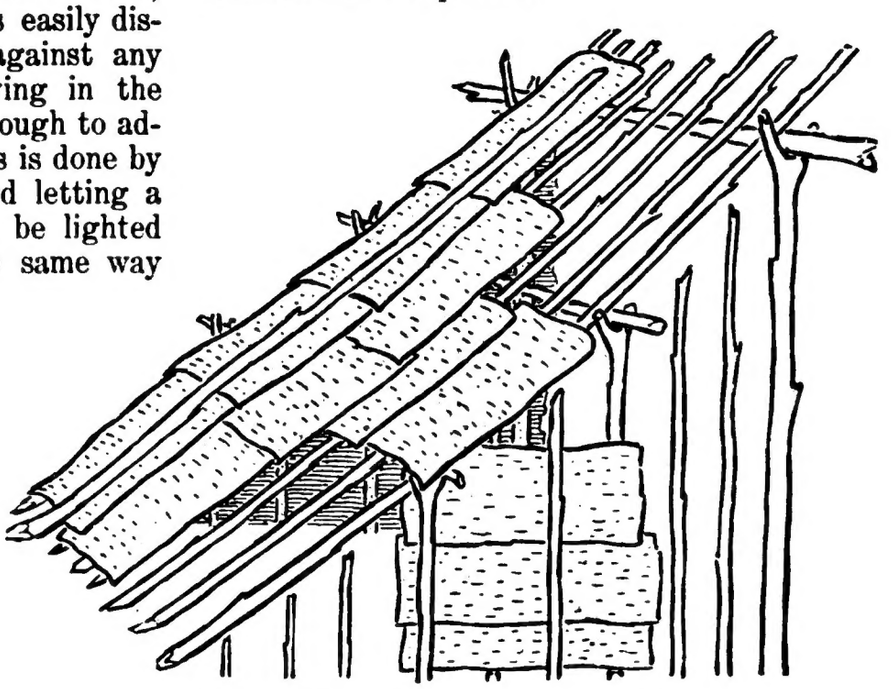


PACK BASKET.

and when there are rapids to run, or much shallow water, a good steel-tipped pole is absolutely necessary. Whether the canoe is of birch-bark or canvas,* it is well to carry a small piece of pitch to mend it with in case of accident. Should the canoe leak, turn it upside down; the hole is easily discovered by placing the lips against any likely-looking place, and drawing in the breath. If the break is free enough to admit air, it should be filled. This is done by thoroughly drying that part, and letting a drop of melted pitch (it can be lighted with a match and used in the same way as sealing-wax) fall on it, after which it should be instantly wiped down with a well-moistened finger, a piece of wood, or other suitable material. The pitch dries immediately, and the canoe is ready again for the water. Always turn the canoe upside down at night or when not in use.

The rest of the outfit ought not to weigh more than eighty-five pounds all told. This is as much as can be carried, without great difficulty, by a man of ordinary strength who is unaccustomed to such work. This load allows of about sixteen days' provisions, as well as tent, bedding, and other necessaries, and may be carried in a knapsack or pack-basket of the pattern used by the Adirondack and Maine guides. The latter pattern is the more convenient, although the former has the advantage of being waterproof. Forehead-straps are sometimes recommended, but it takes a long time to become used to them. Whether you use basket or knapsack, the heaviest things should be placed at the bottom.

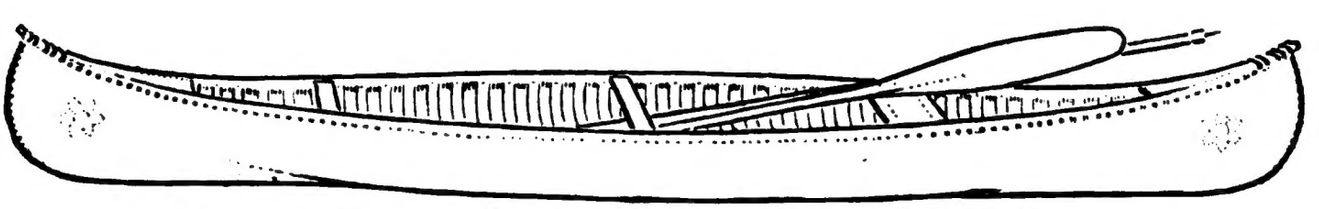
A tent, though not absolutely necessary, is certainly a great addition to one's comfort. It should be small, light, and easily pitched. The accompanying cut shows one which, though not on the market, can be easily constructed, and will be found most convenient. If made of twilled, unbleached muslin, it weighs but four pounds, and this material sheds water almost as well as canvas. Tent silk is somewhat better, but it is much more expensive.



BIRCH-BARK SHACK, SHOWING FRAMEWORK.

For a bed, the sleeping-bag of waterproof canvas, lined with two or more thicknesses of blanket, is most satisfactory for all-round work. But any good blankets sewn together in the form of a bag will answer the purpose. Some sort of waterproof material should, however, be placed between the blankets and the ground. For use in very cold weather there is nothing better than a rabbit-skin blanket, made (by the Canadian Indians) of strips of rabbit-skin twisted and woven together. It is very light and warm.

* By canvas is meant wood, canvas-covered, built after the model of the Indian birch-bark canoe.



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Cooking utensils of aluminum, though expensive, are lighter and very much more durable than tin. An outfit for one person should consist of two cooking pots, one coffee-pot, one frying-pan with detachable handle, two plates, one cup, one bowl, one collapsible reflecting oven (also of aluminum), folding canvas water-bucket, plated knives, forks, and spoons (in preference to steel, as they are more easily cleaned), and one large tinned spoon for use in cooking.

A small-headed axe with long, light handle is far better than a hatchet, and weighs little more. A small hunting-knife without a guard may be included in the list, but a good pocket-knife with a fairly large blade will do just as well.

As a rule, the novice in camping finds at the end of his first trip that he has enough ammunition on hand for half a dozen more; so don't take too much. The man who travels the woods alone shoots only for food, seldom firing an unnecessary shot. He soon follows the law that governs most of the animal world, and learns to love quietness and avoid disturbing the echoes of the woods.

The following is the list of food the writer takes for a two-weeks' trip, in a country where there is probability of obtaining game. Flour, plain or self-raising, twelve pounds (if the former, add a half-pound of baking-powder); bacon, five pounds; rice, four pounds; sugar, two pounds; lard, three pounds; coffee, in tight-closing cans, one pound and a half; tea, a quarter pound (chocolate may be substituted for tea and coffee); condensed milk, unsweetened, three cans; salt, two pounds; dried fruit, apples, peaches, apricots, or prunes, two pounds; butter, two pounds; pepper, quarter pound; beef-capsules, two or three dozen; dried onions or other vegetables, one package. All these should be kept in muslin bags and labelled.

Matches (a few of which may be rendered waterproof by being coated with shellac or wax in case of emergency), nails, wire, string, soap, towels, dish-cloths, needles, thread and buttons, three or four thick carriage candles, a tube of gun-grease, a flask of whiskey in case of a chill, a mosquito net of cheese-cloth for summer trips, pocket compass—of the floating dial pattern—and finally a complete change of clothing, complete the outfit. The footwear required must depend entirely on the country. For the Maine or Canadian woods (excepting the mountainous regions) there is nothing better than the oil-tanned moccasin; these cost one dollar and fifty cents, and last for several months. If worn with inner soles, and two pairs of woollen stockings, or, still better, one pair each of socks and stockings, they are extremely comfortable. Expensive waterproof boots are all very well, but it will be noticed that they are worn rather by the novice than by the old hand at camping.

To make a camp, say, in the Maine woods, select a place that is dry and well sheltered from the north wind; if it has a good landing-place, so much the better. Don't go too far from the water supply, and be sure there is plenty of fuel. The accompanying sketch shows the most simple and convenient form of camp fireplace. It requires no further description, except that the pot-hangers are made by driving a large nail into the smaller end of the forked stick, so that the pot may hang securely.

There is no better kindling than the birch-bark, for even in wet weather it ignites readily if the outer skin is removed. Birch, beech, maple, chestnut, and pine make good fires, but hemlock and spruce do not, unless fairly dry.

To make a comfortable bed, stake down (to prevent their rolling) two small logs, about six feet in length, so as to form the two sides. Then get some well-leaved branches of balsam and remove all the small twigs, and place them, to a depth of eight inches, between the logs: this forms a mattress surprisingly springy. If possible, make the bed before sunset, as the leaves often become dew-laden long before dark. In very cold weather bank the sides of the tent with earth and leaves to keep out the wind. If you have no tent, put up a bark shack: make a rough framework, the roof having a steep pitch, and cover it over with large pieces of birch or spruce bark. Neither of these peel very readily in the autumn, however, although with patience enough of the birch-bark may be obtained. Balsam boughs may be used instead of bark; they will keep out the wind, but the rain will generally find its way through.

THE ASCENT OF THE MOUNTAIN.

Norcross, at the head of Wallenipte-Weekek Lake, a continuation of Pomma-

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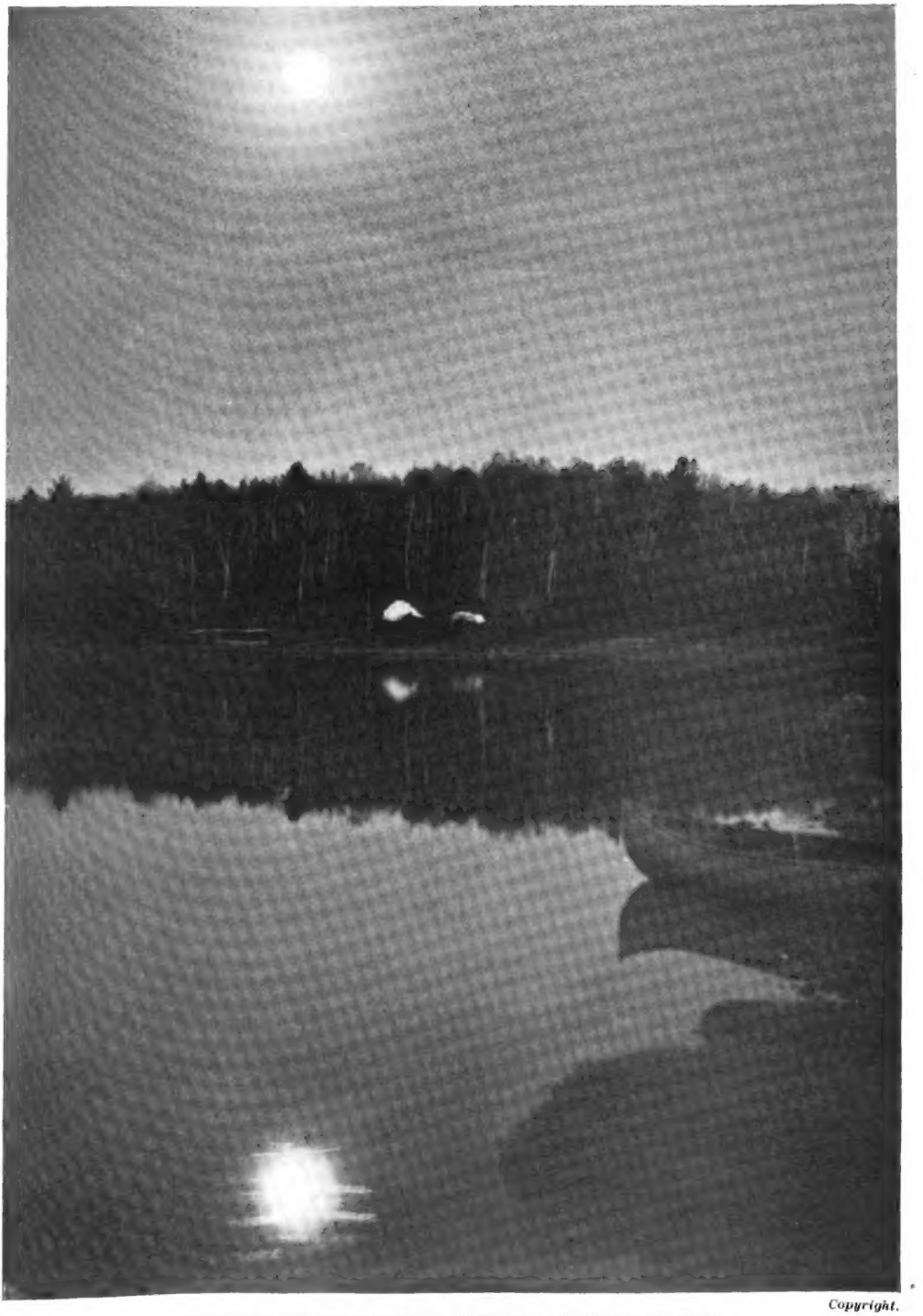

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MOONLIGHT ON THE WESTERN BRANCH OF THE PENOBSCOT RIVER.

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MOUNT KATAHDIN, FROM CAMP OPPOSITE KATAHDIN BROOK.

dumcook Lake, was astir this Sunday morning. It was nearly six o'clock: the steamer, towing its scows laden with winter provender, had left. I found a suitable canoe, into which I placed my belongings, and bidding a short farewell to trains and their like, I started off alone for my goal.

It was a clear, frosty morning; all vegetation was covered with a silvery sparkling jacket, and the chickadees hunted among the frosted leaves for their early breakfast, and the tapping of the woodpeckers sounded loudly in the bright, crisp air; few other birds there were, and all nature seemed hushed.

At a distance of from six to ten miles northeast from the west branch of the Penobscot River, that mighty pile of granite, Mount Katahdin, the "Highest Land," stood out sharp and well defined against the early morning sky, keeping constant guard over the lower lands and the hills so much smaller and less majestic than herself.

No breath of wind stirred the surface of Lake Pommadumcook, and it was difficult to distinguish the reflections from the real objects. The shores are rocky and covered in most parts by fallen timber, called dryki, whose bleached bones shine silvery white against the dark background of evergreens. How deathly quiet it was; occasionally a loon would utter its piteous cry, but that only made the stillness more intense, and the constant rhythmical dip of the paddle could scarcely be heard as it sent the graceful canoe gliding over the polished surface of the water.

It was nearly eleven when I reached Lake Ambajeejus. There the low-lying foreground allowed an uninterrupted view of Katahdin, not only at its full height, but reproduced in detail on the lake's surface. About a mile and a half of paddling brought me to Ambajeejus Falls. Here there is a carry of nearly half a mile, across which, for a moderate sum, a guide hauled my things. Soon after noon I was on the dead waters of the west branch of the Penobscot River.

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"DRYKI" ON THE BORDERS OF LAKE POMMADUMCOOK, AT SUNSET.

This river, resembling a lake, studded with thickly wooded islands, is rather less than two miles in length. On one of these islands I landed, and selecting a suitable place, decided to camp there for the night.

Early the next morning, after walking a short distance through a grassy swamp, I saw a deer feed-

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ing about two hundred yards away. The wind being in my favor, I stalked my game, shot him, and obtained an ample supply of meat.

The weather by this time had grown threatening, and Katahdin was entirely hidden from view by the heavy rain-foreboding clouds, so I decided to camp and make ready for a wet night. No sooner was the tent pitched and a bed of balsam hastily made, than the rain came down in torrents. With the aid of that useful kindling, birch-bark, I started a fire and cooked some chops from my yearling deer.

The next few days were spent in exploring the surrounding country and in making photographs of the various kinds of woodland. One part struck me as being extremely fine and unusual. The ground was a mass of huge bowlders piled up one against the other; these were entirely covered with a thick coating of moss, which in some places was rich green and in others almost white, as though with age. Beneath this velvety carpet the water could be heard, many feet below the surface, seeking a path between the rocks. Though icy cold, it was strongly impregnated with the taste of the cedar, and not palatable. On these bowlders the cedars and some other trees grow, sending their roots among the moss, from which they probably draw the necessary nourishment. Here and there a tree falls and its roots strip the moss entirely from the rock, leaving the smooth granite bare, and looking like a dazzling white jewel with its setting of dark rich green. The numerous tracks prove that this is a favorite resort for deer, but the difficulty of walking makes it anything but a desirable place for still-hunting.

Throughout this region ponds may be found nestling snugly among the low-lying hills. These ponds are usually bordered by a strip of boggy moss, and here we find the pitcher plant, whose dark red vases hold its supply of water. On the surface of the ponds lily-pads float idly, while the ducks dive and play among the long, slimy stalks. Such a place affords the best shooting, both deer and moose frequenting this vicinity of pond-lilies.

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HUGE BOWLDERS, COVERED WITH A THICK COATING OF MOSS, ALMOST WHITE.

Throughout the woodland there is a most confusing labyrinth of more or less defined logging-roads, some leading to old deserted camps, others to the slides where the timber is launched, and many, apparently, to some old decayed stump, the relic of a pine

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KATEPSKONEGAN RAPIDS.

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MOUNT KATAHDIN FROM THE FOOT OF THE SLIDE.

tree sacrificed to the cold steel of the woodman's axe. Along these paths, where the scarlet partridge-berry adds its mite of brilliant color to the rich, sombre shades of the forest-growth, the snowbird hops along, uttering his tiny "twit, twit," as he searches for food. Here also may be found the ruffed grouse, or "partridge," as he is named here, shot, although a tame bird, because his flesh is the greatest luxury supplied by the Maine woods.

One day as I lay on the ground, watching those impertinent thieves, the Canada Jays —known here as Moose-birds and Whiskey-jacks—stealing the scraps of my deer-meat, I was surprised by a strange visitor, who came crashing through the underbrush, and who halted only when she saw the column of pale-blue smoke that rose from my fire. Her curiosity was aroused, and, not seeing me as I lay motionless, she came nearer, within thirty or forty feet. It was the first time I had ever been so close to a cow moose. What a size she looked as she stood there, snorting and trying in vain—for there was no wind—to scent the arch enemy of her kind. After a few moments she trotted off down the bank and disappeared among the

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THE AUTHOR IN CAMP AT PASSAMAGAMET LAKE.

trees on the opposite bank. No other moose ever visited my camp.

The next day I moved camp to Passamagamet carry, where I determined to learn the rudiments of poling a canoe through the rapids. After carefully watching a guide, who kindly gave me some practical suggestions by first going through a part of the rapids alone, I started.

Never shall I forget those first few moments of torture. The rocks loomed up larger and larger, ever increasing in numbers, while the water boiled and raced by as though eager to leave such unpleasant neighbors. After many futile efforts the bow of my canoe was brought to point at the turbulent channel. A huge push, and the light craft shot over the racing waters, passed the rocks, and for a moment wavered; another push, and we were out of reach of the eddy, with time to breathe and rest before attempting the next falls. These were passed after what seemed an interminable time, and then came the return. Occasionally we grazed a partly submerged rock, whose paint-marked surface told of some other canoe that had come in contact with it. Such beacons mark the channel through most of the rapids and shallow places. However, I passed the falls without mishap, and, gliding into the placid dead waters of Passamagamet, rested, utterly exhausted.

The next day at nine o'clock I left Passamagamet, taking my canoe and things across the quarter-mile carry. The wind was ahead, so that paddling to the next rapids, which bear the name of Katepskonegan (commonly pronounced Debsconeag), meaning in Indian "carry place," was slow work, and it was afternoon before I started over the carry of about three-quarters of a mile. Another three miles by water, and I reached the much-dreaded Pockwockomous carry, which is a mile and a half long, and the roughest of rough roads, covered with rocks and fallen timber. My canoe, photographic material, tent, food, etc., made three good loads of about ninety pounds each, so that this carry meant a nine-mile walk. By the time I had made two trips I was so exhausted that no power on earth could have made me carry that dreaded canoe. As it was growing late, I concluded that I had better make ready my camp for the night.

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NORTHEAST SLOPE OF MOUNT KATAHDIN.

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With the morning came my courage, and I bore that canoe over the mile and a half.

Again the wind was ahead, as was also the current, which ran swiftly. Still more rapids, and another carry, known as Abols —probably the short for Aboljackarmegos —and I found myself at the mouth of Katahdin Brook, called by the Indians Aboljackarmegos, the point of departure for the great mountain that looked frowning down on me with its summit enveloped in clouds. I had reached the end of my river-journey, and as it was but noon, I decided to start without delay on my up-hill march to the foot of the mountain. Drawing the canoe on the beach, and placing most of my belongings inside the tent, I started off with a pack containing what things were necessary, such as food, sleeping-bag, clothes, and photographic outfit, perhaps sixty-five pounds in all.

At first the trail, which was newly blazed, led along the east bank of the stream, then branching off still farther to the east, took an irregular course through the thickly wooded country, up and down steep hills and through swampy land, where the spongy moss makes a rich green carpet that deadens all sound.

Walking was not easy, and my pack, as time went on, grew so heavy that I began to wonder whether I could reach the foot of the slide before nightfall; so before the first two miles had been accomplished, I put most of my ammunition and what clothes I could spare into the heavy waterproof canvas cover of my sleeping-bag and cached them beneath a prominent rock.

After walking another mile or so, I came to an old deserted lumber camp composed of four large, dilapidated log-houses. Two grouse were sunning themselves in the road, and a red squirrel sat on a tree stump, breaking the solemn stillness of the Maine woods with his impudent questioning: beside the acrobatic chickadee, who introduces himself by name to every passer-by, this red squirrel is the most insistent bit of life to be found throughout these quiet forest lands.

After the first four miles, the trail through the leaf-strewn woods became less distinct, for the blazings, though new, were so far apart that it was necessary to use the utmost care to prevent losing sight of them altogether. To make matters worse, the light was rapidly failing, and the sky was a mass of heavy, rain-foreboding clouds. By five o'clock it was dark, and then I realized that I had lost my way. After searching in vain for any sign of the axe, I concluded to camp here for the night, but most of the wood being rotten and wet, I had great difficulty in making a fire. At last, however, by its light I managed to build a rude shelter of birch-bark, and make a carpet of the same material, for the ground was soggy. While eating my supper I heard footsteps, and peering into the darkness, saw within a few feet of where I sat two red orbs that shone like burning coals. At that moment the camp-fire, bestirring itself, shot up a flame that enabled me to see my visitor more clearly—a poor harmless doe, which scampered off and was instantly lost in the darkness.

How glad I was when the morning broke cold and clear after the rain during the night. I breakfasted hastily and once more started out. At first I found what I thought to be the lost Katahdin trail, but which afterwards proved to be three miles to the east of it. However, I reached the foot of the slide before sunset—tired out, but not discouraged. Having shot a couple of partridges (ruffed grouse), I enjoyed a delicious supper, and taking possession of a ready-made birch-bark shack, turned in early for the night: as the huge fire burned and crackled, tempering the keenness of the cold mountain air, I went to sleep, happy in the promise of fine weather for the morrow's climb up the great mountain whose summit lost itself in the starry vault of the heavens.

The next morning, long before the sun had touched the mountain-peak, I was up and ready for the start. The glorious morning was thus far bearing out the promise of the night before; somewhat hazy in the lower lands, but bright up here. Katahdin's night-cap rolled lazily over the topmost peak and disappeared down the sheltered slope into the valley below. The wind blew fresh from the northwest, carrying with it a few small vapor-like clouds that melted away as they neared the distant mountains. Before me, like a gigantic staircase, was the slide, a mass of bowlders and gravel, bordered darkly on either side by trees and scrub. The upper part of the staircase was painted gold, from the palette of the rising sun, while all else was in cold shadow—but the warm hue, spreading rapidly downward,

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soon enveloped me. Continuing, it was difficult, even with the aid of a stout staff, to make much progress. Where the rocks were of moderate size the ascent was not more tiring than in climbing an insecure stairway, but farther up it was much worse, for there the bowlders were very smooth and large, and it became necessary to advance inch by inch on my hands and knees. It was exhausting work, and as I looked up at the highest point, I wondered whether I would be able to carry my camera over that awful mass of bowlders.

Along this slowly moving stream of rock grew a coarse variety of grass, and, between the large rocks, a small, tough, wooded shrub, seeking protection from the fury of the winds and fighting hard for existence amid the inhospitable surroundings.

After about two hours of this climbing I reached the top of the slide, and crawling through a small opening between two huge rocks, came out suddenly upon the summit of the western part of Mount Katahdin, the highest peak, 5,385 feet above sea-level, being three miles farther to the east. The wind was blowing with such force that I did not attempt yet to cross the narrow strip that leads to this highest peak, but contented myself for the present with the view spread out before me. It was superb. The thin purple haze covering the lowland added to the beauty of the scene, for in places the sun would break through, and touching some lake or river, make it gleam like burnished silver. As far as the eye could reach were rivers and streams and lakes and ponds —a view of unsurpassable beauty.

The tableland is in most part stony and rough, with a scanty growth of vegetation. In one of the occasional tracts of bog I found a spring of good drinking water, and near it a sardine tin and an empty flask—unmistakable signs of man who had come here to hunt the much sought after caribou, probably, and to carry away the antlers, for the bones of the poor beasts lay there bleaching among the rocks. The fresh tracks of their broad feet showed, moreover, that several had but a few hours earlier been feeding here, over the natural browse of their kind. Walking across to the northern slope of the mountain, I found this to be grander even than the part I had already seen. The mountain presented an almost perpendicular wall of solid rock which seemed at least 4,000 feet high. Below, sheltered from the wind, a large cloud lay drifting lazily over the tops of low-lying hills. By securing the camera to a large rock and protect-

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SUNRISE ON THE WEST BRANCH OF THE PENOBSCOT RIVER.

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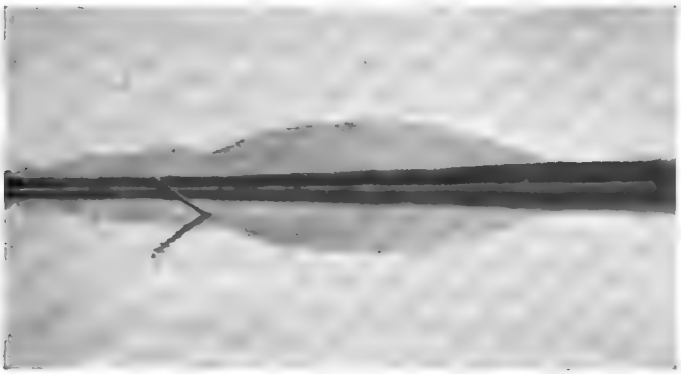
FROM THE HIGHEST SLOPE OF MOUNT KATAHDIN.

ing it from the increasing force of the wind, I succeeded in taking the accompanying photograph. The clouds which had been scudding rapidly overhead came lower and lower, until some of them, like so many cotton-balls, now rolled over the rough surface of the tableland—a warning to retrace my steps before the mountain became entirely enveloped. So I hurried back to where the two "monuments," or heaps of stones, marked the entrance to the slide. Before me two tit-larks flew off, singing as they went; so wild were they that they would not trust man even in this remote place. These hardy little fellows, on their way from the Arctic regions, were the only birds I saw on this bleak tableland. Leaving them, I started on my downward journey just as the clouds were gathering in masses around the higher peaks. A little more than half an hour of jumping, sliding, and tumbling brought me back again to the birch-bark shack. By this time the entire mountain-top was lost to view among the clouds, and the next morning I bade farewell to the land of the balsam fir.



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MOUNT KATAHDIN FROM LAKE AMBAJEEJUS.

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"AND THEN ABOVE THE MANY VOICES OF THE PENT-UP STREAM THEY HEARD THE CLIPPING STROKES OF HIS AXE."

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BLACK MURCHISON.

A TALE OF THE LUMBER CAMPS.

By Maximilian Foster.

Illustrated by Frank Walter Taylor.

WINTER gripped the wilderness and the eternal hills, and the snow fell, sifting with a whisper through the trees. At night the north wind roared among the tops, or flew, whooping, along the wooded aisles; and day by day the drifts rose higher. It grew cold—bitter cold; and between the storms, when the sky looked out of the streaming clouds, startling noises broke the momentary quiet—the crash of overburdened trees and the crack of timber rent by the frost. Murchison, foreman of the lumber gangs, viewed the prospect blankly. At the best his crew was a shiftless band of down-river laggards—"dummies," he called them—and at every opportunity they rose in a body to make trouble, to idle and brawl in the camp. Sometimes every axe on the works, weather-bound, was silent; the storms followed fast; drifts piled higher on the hauling roads, and the undriven teams stamped fretfully in the hovel. Then Murchison's anxiety grew. He saw the spring drive approaching, and a third, perhaps, of the winter's logging yet to be done. Hour after hour, at these seasons of idleness, he clung to the stove in the cook-room, gnawing his fingers, dismayed, and swearing under his breath, while the lazy crew made merry over its holiday at Red Brook Camp.

"Come there, Murchison!" cried Lonnigan, head timber-cruiser for McNair's concern, "there's no good wasting a heart-break over weather like this. Peck up a bit, man!"

He clapped Murchison on the shoulder, and the foreman stared around, mumbling. Once more a burst of wind shouted about the cabin, and before the long glass window let in between the side-logs the snow danced, a blinding vortex of flakes. "Dear knows," he muttered, "it ain't much like summer or—" An echo of high voices in the other room cut him short. He threw up his head and listened impatiently, a scowl upon his brow. "What'll they be at?" he asked. "They'll be makin' proud

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merry, to-day. Idle hands for the devil to find wark, I misdoubt—eh—what's that, now?"

In the babel was a new note, rasping and strident. "Eh—what's that?" he demanded again. "That's loud gallivantin' for sober men. Is it drinkin' they——"

A sudden uproar arose—a clamor of voices—the crash of a table overturned. The shouts grew; there was the noise of a violent scuffle, and Murchison, white with rage, leaped to the door and bore through into the other room.

The gloomy cabin was filled with struggling figures. Two men were on the floor, and in their fall they had dragged down the table and the lines filled with drying garments. In every quarter the others were at it—stand up and knock down; and across the deacon-seat, the hewn bench before the bunks, McPheeters, the teamster, was stretched, screaming with fear and pain. Over him stood Halloran, a wild islander of Prince Edward's, evil-faced and the worst of the river gangs. He was striving to drive in the teamster's face with a knotted fist, and his rage was abominable.

Murchison, with the timber-cruiser at his heels, fought into the press. Riot resounded; at the first blow almost the entire crew turned upon the foreman, and for a moment things had an evil look. But Lonnigan backed up his friend. Between them they routed the brawlers, and the trouble was past save that Halloran, yelling, still raged above the teamster.

"Away from there!" cried Murchison. He seized the islander by the throat, the crowd pressed in, and a glint of steel flashed in the gloom. "By God! He's stuck me!" roared the foreman, felling Halloran with a blow; and at this the conflict ended abruptly. Clinging to his elbow, Murchison glared at the panting crew, his brow black with anger, and their eyes quailing before his. "Who brought that here?" he asked, menacing and vengeful. He pointed at a whiskey jug overturned upon the bunks, but there was no answer. Scornfully, he turned to the man on the floor, and stirred him with a none too gentle foot. Halloran worked stupidly to his knees, and crouched his head, swaying unsteadily. "Ye murderin' blaggart!" the foreman muttered. "Should I kill ye?" He raised a hand; and at the threat, the man bent aside, and there lay the knife beneath him. His shifty eyes, roaming about the floor, fixed themselves upon the weapon, and then, like a hawk, he swooped upon it. But Lonnigan, who had been watching, was forewarned. He kicked the knife aside, and Murchison, vengeful and furious, grappled with the mad islander. "Now out o' this!" the foreman screamed, beside himself with anger. "Out av it, bag and baggage! I'll have no murderin' cut-throat a-workin' by me—git!" He drove the man before him out into the flying snow, and returning, seized Halloran's bag from the bunks, and pitched it into the door-yard. His eye was flashing, he quivered with emotion, and Lonnigan, brooding upon the scene, breathed with relief when the foreman turned away.

"THERE WAS THE TRAGEDY FULFILLED."

Outside stood the drunken wretch, spitting upon the snow, cursing the cabin and all it held, and demanding his "time." He lurched about unsteadily. Drink and rage plainly had made him little less than mad. Lonnigan looked him over, debating, and turned back to the cook-room. "See here, Rory," spoke the tim-

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ber-cruiser, "it's little better nor murder to send that dog away a day like this, an' him thick wit' drink. Why, man, he'll die in the snow!"

Murchison wheeled on his stool, his face transfigured with passion. "What's that to you?" he cried with savage emphasis. "Go he shall, or if he comes back I'll choke the wind from his weazen!" With another violent gesture he threw up his arm. "See—the dog stabbed me deep." His sleeve was filled with blood.

Lonnigan pressed his lips together and nibbled at the ends of his heavy moustache. "He desarves what he gits," he agreed, finally, "but that's no call for ye to bring him death. And death it is, Rory Murchison, if ye send him away, and a curse on the rest o' yer days. It's to me to bring the man back—eh?"

Murchison strode before him, barring the way. "I'm master here, Tom Lonnigan—ye'll take that to mind. Friends we've been the years agone, but I warn ye—don't cross me now!" He turned and flung open the door. Halloran, swaying about, was putting his scattered belongings into his kit, and beside him was the shanty cook, offering a bag of food to stay the man to the settlements. "Out o' this!" roared Murchison, anew, and with a blow knocked the food broadcast. Halloran, seizing his bag, fled unsteadily to the edge of the tote-road and turned, wild and malevolent as ever. "Black sorrer be on yer heart, Murchison," he cursed, "be ye sleepin' or wakin'. Evil be yer work and the shadow av deat' at yer heels. May yer frien'ship wither an' yer days go wrong. A curse—aghr-r!" He spat upon the snow again, and then, fear-stricken at a vengeful movement of the foreman, turned and fled loosely along the way. "Git yer time at the depot," roared Murchison after him, "an' mind if ye once set foot on the river agin, I'll kill ye where I see ye!"

Lonnigan confronted Murchison at the door, his face white, and one finger raised in warning. "It's not short o' murder," said the timber-cruiser, slowly. "Choose afore it's too late." A scornful stare was the answer, and Murchison, slamming back into the cook-room, lurched to a seat and bound up his wounded arm unaided.

Night fell and the storm ceased. Overhead the sky looked forth between the driving clouds, bright with its stellar multitude; but still Murchison, sombre and sullen, clung to the stove in the cook-room, and made no move when the men clattered into the evening meal. Nor would he eat. He nursed his arm long hours; then, like a wild beast going to its den, crept into his bunk and drew the spreads about him. "New orders here!" he rapped. "Snow or no snow, there'll be work done to-morry, and the days to follow. An' God help the dog I find bringin' rum agin to this here cabin. Ye hear *that*—now chaw on it!" There was no answer to what he said. His black anger, for the time, had terrorized his men.

Before daylight Murchison arose, and with a twinge of pain washed himself at the sink. Ferguson, the cook, busy at the morning meal, followed his back with evil glances, yet ever shifted his eyes when Murchison turned. "Rout out the crew," the foreman growled, flashing suddenly upon him, "and you, Ferguson," he cried with a finger pointing at the cook, "no sour looks there, or if ye don't like it—git! I'm runnin' this camp, and"—with an oath—"I'll run it to the last log!"

The cook turned sullenly to the other room, dark glances for an answer. "Turn out—all hands!" he cried, rousing the sleepers. "Turn out there!" The men crawled from the bunks, silent and with guilty glances at each other. Few spoke as they drew on their shoe-packs and larrikins, and at every turn of the foreman's voice their talk hushed throughout. Silently they pushed to the tables at the cook's call of "Breakfast!" and as they fell to at their beans, their herring and buns—great tin pans of steaming buns—they watched the foreman craftily.

Lonnigan sat by the stove, drawing on his "footing"—three pairs of woollen socks, hand-knitted and heavy—for he felt that he had grave work before him, and perhaps must travel far. Sometimes his eye rested solemnly on the foreman, but there was no speech between them. Murchison, blacker than ever, had tied up his arm in a sling, and with one sleeve of his blanket mackinaw loosely flapping, strode out into the snow. "Along there," he growled to the men, and like a troop of sheep the gangs followed, bound for the day's labor on the works. Once more the woods resounded with the clipping strokes of the axe, the crash of falling trees, and the shouting of teamsters as they urged

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their horses wallowing through the drifts. But Lonnigan hung to the stove long after the others had gone. "That grub team from the depot oughter be here soon—eh?" he ventured to the cook. "Who's haulin' to-day?"

"Dunno!" snapped the cook. He was still surly that the foreman should have singled him out from among the others. Nor was Lonnigan himself more brisk. He sulked about the cabin anxiously, and was just drawing on his moccasins when he heard a jumper's runners thudding upon the skids of the bridge below, and then the teamster's cries and the clear tinkle of the yoke-bells. With his snowshoes under his arm, he went down to meet it.

"Mornin'," he said, answering the man's greetings. "Sorter stiff comin' through—eh? See anything o' Halloran goin' out, yesterd'y?" The teamster shook his head. "What's that—no?" cried Lonnigan. "Warn't he to the depot, last night?" He hung upon the teamster's words, and then hurriedly whipped the thongs of the snowshoes about his ankles, and sped away down the slope. As he hastened along, his eyes were fixed on the unbroken snow at the sides, and a mile beyond he found, with a beating heart, the signs that he sought.

At the edge of the tote-road was the snow-blurred trail of a man. It led down the ridge to the shore of a broad spring-pond, followed the bank a ways, and then struck straight across. Plainly, Halloran had designed to take this short cut to save a long detour around the head of the pond. But it was a perilous way; the ice, rotted by the bubbling springs, would hardly bear a mink—much less a man. Lonnigan saw the tracks lead unsteadily to the centre across the treacherous skim of snow, and followed them with his eye. There was the tragedy fulfilled. A broad circle of shattered ice, disordered and frozen fast, broke the even expanse. At its edge lay Halloran's pack, half-submerged, and beyond was his cap. On every side, the drama was portrayed—the tilted cakes broken from the field, the wild clutches furrowing the skim of snow, the stain of muddy water thrashed about. Each spoke as with a crying voice, telling of this last agony, the struggle—weakness—resignation—and then death. Sickened, Lonnigan turned away, for death of man is a sorrowful climax in the strong life of the woods.

Murchison stood in the main log-yard on the river, roughly shouting orders. But as Lonnigan drew near he saw the foreman furtively watching him, eager-eyed and frightened, overcome, no doubt, by divination of the tragedy. Then Murchison plucked himself together, and seemed, resolutely, to turn his back upon the bearer of ill tidings. "Murchison," called the timber-cruiser, "Murchison—a word wit' ye!" But the foreman gave no notice. He roared another order, and when Lonnigan strode before him, he saw that Murchison's face was white and convulsed. "He's dead—drownded in the spring-pond beyant," said Lonnigan, slowly and cruelly. "I warnt ye there'd be murder on yer soul." Murchison stared at him darkly. "'Twas on his own head, he give me cause," he muttered; "ye'll not come here tauntin' me wit' it—No!" He roared the last word, tossing his head, and the men on the yard ceased their labor, watching open-mouthed. "Back to yer work!" cried the foreman, and again they pried at the logs with their peaveys. "Ye mark these words, Lonnigan—we split here. I'll have no man come callin' me from my name, friend he was or not. You steer your way, and I'll keep mine. That goes—ye hear me?" He waved his unwounded arm in the air, cried the words again, and went storming down the road, a wild thing.

"Black words and a black heart," said one of the loggers. "Black Murchison he is."

A curse, indeed, seemed to have fallen upon the camp and upon Black Murchison, as they called him. His moody humors grew; dark and forbidding, the men came superstitiously to fear him and the works, too. Some deserted, forsaking even their pay to be quit of the place, and the word was passed among the camps that a second Devil's Hovel had come to rival that dread resort on the Miramichi. Through the winter the foreman kept to himself and to his thoughts, and Lonnigan, with a softening heart, grew sorrowful for his suffering. He watched the foreman's mood, noted the change in mind and manner, and felt that the man, perhaps, had borne enough. But this flight of penitence was brief. When Lonnigan broke the silence and besought a truce, offering his hand at

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the same time, he was met with angry scorn, rallied and abused, and bade to keep to his own affairs. Such anger confounded the peacemaker's pity, and wrath replaced it. "Pray God that ye be forgiven, Rory Murchison," he cried. "Ye're a sinful man wit' a curse on yer heart. Pray God for forgiveness!" But Black Murchison shook a fist in the other's face, and bade him have a care. "Yer words in yer teeth!" he cried. "As that"—he spat upon the floor— "as that I heed ye an' all ye say, ye mealy-mouth, an' when it's trouble ye seek, I but pray God ye come to me!" They almost came to blows, and Ferguson, the cook, watching craftily, grinned in glee.

Spring came, and the river, bursting from its shackles, roared among the hills. High water spread on every hand; at the river yards, thundering noises resounded—the boom of the logs hurled into the raging stream, the voice of the current and the clamor of the gangs as they pitched the timber down the slopes. Black Murchison raged among them. The winter's lumbering had fallen short of the estimate by many thousand feet, and he knew already that it would be high-priced stock when delivered at the booms. For this reason he sought to cut down expenses on the drive, to get double work for the little pay, and to push every hand in the crew to its limit. So, with every man overworked, the sullen crew became more shiftless than ever, and discord and temper grew on every side.

Late of an afternoon the foreman was crying orders up the slope to a yard on the bluff. He roared his directions sharply, and had turned again to the river, his back to the slide, when a two-foot pine-butt came bounding and ripping down the slope. He stood an instant, appalled at its onslaught, and barely jumped in time to escape, the log flinging overhead out into the stream. "Who did that?" he cried, panting to the crest; but he got no satisfaction. The men averred, stoutly, that it was an accident, the log had slipped; but Murchison suspected worse, and in punishment set them a double task. So things went on till the last log was in the river, and the drive gone away toward the south.

It was a quick drive but a silent one—a thing that the lumber bosses fear. There was no gay singing in the bateaus, no sky-larking on the driving path, no merriment, but a sulky, half-mutinous crew. Again there was drinking, and although Murchison sought the offender who trafficked in the contraband, he could get no trace till the drive reached the head of the long falls. That night, the wongan boat with its food and camp-kit for the men fell far behind the crew. Murchison, mindful of previous delays, watched for it eagerly, and then turned back along the river. As he reached the head of the quick-water, he saw it coming, and at the first glance marked that something was wrong. In the bow was the cook, working fitfully with a pick-pole, and bawling tipsy songs, while the two other men aboard joined thickly in the chorus. Before he could reach the boat a cross-current caught the bow and whirled the unwieldy craft about. For an instant he saw it drift swiftly on—then a high rock struck it in the centre, it careened with the press of the water on its beam, groaned with every timber speaking, and split in twain.

Murchison snatched the cook from the stream and, by the collar, dragged him ashore, leaving the others to save themselves. As he hauled him to safety, a bottle fell from his pocket and broke, with a tinkle of glass upon the rocks and the raw odor of rum. "You—eh?" cried Murchison thickly, "then ye're the one that's brought it here. Away—away, or—" He struck at the man savagely, and the cook, crying and cursing, hobbled off down river.

It was next to mutiny when the crew heard what had happened. Together they made a stand against the foreman, refusing to work till fed, and Murchison, boiling inwardly, gave way. He sent part of the gang back to save what they could from the wreck, and for the moment the drive was held up. Moreover, the raft-men had gone down the river for a look at the falls, and were back, solemn and doubtful.

"I misdoubt we can run it," said one, braving the foreman. "It's best to send the rafts through unhandled."

"What!" cried Murchison, "and split 'em on the rocks to build anew! I'm drivin' logs here, my friend—not boatin' for the fun of it."

"Then ye'll lead the way," the man

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suggested, and Murchison laughed scornfully.

"I'll lead—yes!" he cried, "and the man that quits afterward can ask his time—he'll go—ye hear me?"

"He'll be losin' little," the man muttered, turning away. But Murchison hardly heard. He was looking down the night-camp, his eyes upon the dripping cook. The man was listening, and, as Murchison saw him, tried to hide.

"Not out o' here?" cried the foreman. "Away—I warned ye!" He strode forward with a speaking gesture, and the cook fled.

"Murderer!" he mocked. "Murderer!" And Murchison, halting, grew white.

"God save me from it agin," he muttered to himself; "I'm a sore pressed man, these days."

Lonnigan overheard, but said nothing. He went down by the river to smoke a pipe alone, and sat there, his eye on the ripping current and the black logs driving by, wondering where all the troubles of the foreman would end. Since their last encounter he and Murchison had spent no words between them, but in the midst of these trials—the shirking of the crew, the mishaps and delays—he felt a pity for the dark, lonely man, and was still ready to call a truce. He was working the problem over in his mind in doubt of the solution, when he heard a rip-saw somewhere down the river—an unwonted noise at this hour of the evening. He rose to peer over the bank, and a figure approached—Ferguson, the cook. He was still wet, and thick with drink, and his eyes gleamed fiercely.

"Thought ye'd went down river," Lonnigan observed. The cook started and turned precipitately, as if to flee. "Oh—eh—it's you, is it?" he said. "I thought 'twas him—the devil!" He shook a fist in the direction of the camp, and thrust out his jaw, hatred and craft in his face. "I'll fix him," he swore under his breath. "I'll show the dog he can't drive me like he did poor Halloran that's dead—the murderer!"

"Eh?" cried Lonnigan, staring at the man, and perturbed at his evil spleen. But Ferguson passed on down the driving path and was gone, still muttering and vengeful.

The crew, in the morning, turned out early, and once more the foreman harangued them roundly, sparing neither threats nor hard words. It seemed from his manner that he felt that abuse alone had merits; that this only could stir them to their work; that he must drive and brow-beat and bully-rag and waste no effort in soft speech. So the gangs went to the river more sullen than ever, with Murchison, his shoulders squared, striding on ahead. Pick-pole in hand, he leaped aboard the foremost raft, and called for a volunteer to take the stern sweep. None stirred. The men grouped on the bank, and stood waiting. Mutiny was imminent. Lonnigan, hardly astonished, looked them over and stepped to the front. He took up a pick-pole, went forward, and cast off the cumbersome craft. The current caught it; the train of logs, bound by chains and transverse cleats fastened between wooden pegs, trundled onward, quickened, and at the full pace of the stream sped toward the gorge. Forward stood Black Murchison, bending his weight to the bow sweep, with a contemptuous smile on his face. He said nothing, but kept his eyes fixed ahead on the cloud of white vapor rolling up from the rapids. High walls of rock loomed on each side, and between them roared the rips, the current swelling upward in the narrow channel and bewildering with its thunder. A wave struck the first length of logs and swirled about the foreman's waist while the whole fabric of the raft heaved sinuously. Then the wave passed aft and, bounding like a frightened thing, the log-float swept onward into the seething turmoil.

A hundred confusing sounds beat back from wall to wall; the air was clouded with flying spray. Wave followed wave, and the logs, whetting their flanks together, groaned powerfully. Once a slant of current swept the raft away from the swelling centre of the stream, and as it edged down the slope, slipping perilously near to the walls of rock, Black Murchison, with his jaws clenched, fought anew at the sweep, and at the other end Lonnigan wrestled with his own. The peril was barely passed when they struck the bend. Murchison drove the head around, the other length safely followed, and they hurled upon the edge of the last wild water. But as Lonnigan breathed a sigh of relief, disaster fell. A loud crack—a crash—the dull boom

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of a striking log burst above the uproar of the water. He saw the forward length of the raft leap upward and fly apart; the logs, up-ending, beat about, like arms of agony, and then Murchison was engulfed. A shrill scream from the rocky wall followed the disaster, and Lonnigan, half-dazed as in a dream, looked and saw Ferguson, the cook, leaning down to stare into the flying current. One fist was raised in execration, and at that instant a leaping timber, tripping on a rock, somersaulted above the stream and, falling, struck the cook from his hold. Faint with the horror of it all, Lonnigan swept on, and the eddy, reaching out, sucked the wreck of the raft into quiet water.

A chorus of yells, of wild cries and commands, broke from the driving-gang at the foot of the pitch. But Lonnigan was deaf to their warning. Sure-footed with his calked boots, he leaped from log to log out into the centre of the stream. There he saw Ferguson, limp and insensible, drawn ashore with a pitch-pole, but down the stream was the foreman, out of reach, weakly striving to save himself. A bloody cut was on his brow, it was a miracle that the logs had not ground him to death, and he was feebly giving in when Lonnigan leaped into the icy water and, battling the current, hauled him to the bank.

"Ferguson—where is he?" Lonnigan demanded, once that he had regained his breath. They pointed up the bank where the man lay, groaning in pain. "Both his legs is broke," some one explained. Lonnigan strode over to stare at him, and then passed on down the river. With a pick-pole, he ran along, poking at a bit of wood in the current. "See that?" he exclaimed, hauling it ashore. It was a peg, sawed half through, and the men nodded stupidly, hardly understanding. "See it—hey? Well, him—Ferguson—sawed it in two. It's from the raft—that's why she split and broke up."

Murchison revived slowly. For an hour he sat weakly beside the stream, staring at the gangs busy with the press of logs that came leaping down the pitch. Then he rose. Lonnigan, hatless and dripping, stood out on the boom at the bend, working with a gang at a float of logs that threatened, momentarily, to jam in the narrow channel. "Who was it picked me from the river?" asked the foreman, and they nodded toward Lonnigan. "Him—eh?" he muttered. He puckered his brow, and stood looking in moody doubt at his rescuer, the man he had flouted and abused—one who, in the nick of time, had risked his own life to save his oppressor from death. Then he fell again to biting his fingers, staring at the river and nonplussed, when Lonnigan leaped ashore. He saw him coming, looked away and, then abruptly turning, made off up the river.

There was a low murmur of indignation from the watching gang, and Lonnigan halted. He saw the foreman dart along the driving path, leaving, without so much as a word or look of gratitude, and his jaw fell, a flush of anger showing for an instant in his face. But he kept his own counsel, and although the men watched him covertly, hoping for an outbreak, he said nothing and turned again to the river, where the fleet of bateaus was racing down the pitch. "Put that man aboard!" he cried, waving a hand toward the cook, and while they lifted the groaning man into the boat, he stood by, still looking after the foreman hastening along the bank.

The drive went on. Day by day it moved slowly down the river, and at last was delivered at the booms. Murchison still kept his distance, but a change seemed to have fallen upon him. He no longer raged and bullied. Instead, solemn and dumb, he hovered over the men, directing their work with an occasional word, or a gesture half-hearted, almost, in its weakness. The result was patent—the crew, relieved of the strong hand over them, resumed their old shiftless, insolent manner, and at the main office, when paid off for the season's work, they grouped together and hooted him. "Ye dogs!" cried Lonnigan, confronting the mob, "try that again, and ye'll have me to deal wit'!"

"Ah-r!" laughed one of them, "ye have no call to stand by Black Murchison—did he treat ye wit' fine words—eh?" But they fell back, nevertheless, before him, and were gone.

The summer passed, and once more the crews were on their way to the woods. Murchison was in the north most of the time, cruising out the timber, and Lonnigan rarely saw him save at a distance. Once the foreman went down-river in a canoe, and Lonnigan, working at his harvest, saw him lift his paddle and stand up to look at

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the farm-house. But when he caught the other's eye, he dropped guiltily and paddled on.

Ferguson mended slowly, and when he came out was a cripple. His day of usefulness in the woods was ended, and Lonnigan wondered how the man's family was kept. When next he met Ferguson's woman he made bold to ask. "How're we doin'?" "Fair good," she answered, "but it's God's providence fallen out o' the skies!" Lonnigan's air of astonishment at this statement set her tongue going, and she gave him a bit of news. "It's money comin' in the post," she explained, "but I'll make plain to ye, Mister Lonnigan, I'll not be knowin' who 'tis from." He asked to see the envelope, and she drew one from her pocket. Lonnigan looked at the writing, and whistled in amazement. "Ye'll know it?" she demanded, but he resolutely shook his head. Then she told him that her boy, Denny, had the offer of a job—to go into the woods as "cookey"—the cook's assistant—at Red Brook Camp.

"That's Murchison's," observed Lonnigan, and the woman, with a sudden flash of anger, evil and eager, uttered a curse upon the foreman. "No," she cried, "I'll not wish him more than the worst he c'n git for what he's brought to me and mine. A curse upon Black Murchison. But for McNair—I misdoubt it was the boss that sends us the help—but for McNair this man had brought us all to the town to keep."

Lonnigan bade her have a caution. "Don't judge afore ye know, Maggie Ferguson," he observed tartly, "there's worse men than Murchison, did ye but know it. Sometime, may be, ye'll cry forgiveness for them words o' your own."

Black Murchison was back at the camp, and the winter's work had begun. Some of the old crew had returned, but they were few indeed, for McNair had blacklisted the others. Early in the season the boss came up to look over the camp, and then called Murchison aside. "Fear 'tis little better than the last gang," said the boss, shaking his head, "ye'll fair have to drive 'em, Murchison; drive 'em hard, too, I warrant." Denny Ferguson, working in the cook-room, heard the order, and shook a fist at the foreman's back. "He'll not drive me, the black dog," he whispered to the cook, grinning malevolently. "He'll not do me as he did dad." Insolent and rebellious, the lad made it a point of crossing the foreman. No opportunity however small was lost, and time and again the cook cautioned him that he would be turned ignominiously adrift. But the lad kept on, impudent as ever, and one evening deliberately upset a boiling kettle upon the foreman as he sat by the stove. Murchison started to his feet, once more aflame with anger, and then checked himself. "Have a care, lad," he said slowly, "have a care. I've stood it long." The boy, sneering, looked him in the eye.

"Ye'll do naught," he cried. "Ye can't turn me away—I'm Mr. McNair's hire—I dare ye!"

Murchison smiled sadly, and turned from him. "Did ye but know, lad," he said, nodding his head. "If ye but knew!"

Convinced that he had triumphed, Denny Ferguson kept on with his insolence, and boasted roundly that he held the whip-hand over the foreman. The crew laughed at the impish braggart and his boasts, and warned him to look sharp. But still all this had an effect, and things once more began to look black at Red Brook Camp.

One night in the dead of winter, the crew was rollicking in the main cabin, skylarking and merry, when a sudden hush fell upon them. A low cry resounded from the forest, a thin, piercing note—a wail of anguish and agony. "What's that!" cried one of the choppers, leaping to his feet. With eager attention the crew listened, and once more the cry was repeated. "Black Murchison—Black Murchison," it keened, "I'm a-drownint—a-drownint." There it stopped, and Lonnigan, jumping to the door, ran out into the snow. The night was quiet, the wind had lulled, and he heard only the distant noises of the forest working in the frost. He listened intently, but could hear nothing else, and, returning to the cabin, found the crew, white and trembling in superstitious fear, whispering to each other. Again on the following night the cry was repeated. "It's dead Halloran!" the men whispered, awe-struck. "The camp's ha'nted!" Lonnigan strode into the back room and looked about. Murchison was in his bunk, sitting bolt upright and his face convulsed. He had heard the cry and was listening for the repeat. But when he saw Lonnigan he dropped back and drew the spreads about his ears.

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"Dead Halloran is on the works," said the men; "the curse is comin' to us all."

"Ye fools!" cried Lonnigan, "it was but the wind." He said this to calm their fears, yet even he had been touched by the uncanny happening. Then, moved by a sudden thought, he counted the men, and finding none missing, rushed into the cook-room. There the cook and Denny Ferguson were working briskly, calm and quite oblivious of the commotion among the crew. "Did ye hear it?" he demanded, and after looking blankly at him, they laughed.

"Ye mean the voice," asked the cook. "Sure it's but the wind pipin' in the trees."

Many nights passed, and the voice kept silence. But every evening, when dusk fell upon the wild, the men hastened homeward, fearing to tarry in the forest. The thing had got upon their nerves, and three, who were not in debt to the clerk and could leave as they chose, deserted the camp and struck for the clearings. Without a word. Black Murchison let them go, and when a month had passed in quiet, the crew once more plucked up its courage. "'Twas the wind, they agreed, "it played us a trick—eh?" But each night Lonnigan took his seat near the door, ready to rush forth at the first alarm, to make sure of the shape that brought this uncanny, demoralizing message from the dead. He had almost convinced himself that the thing had ended, when again, one silent, snowy evening, the cry was repeated. "Black Murchison—Black—" Here it ended, as Lonnigan dashed open the door. At full speed he ran around the cabin, but his chase was futile, and after a half-hour's search, he returned. In the cook-room Denny Ferguson was still up and apparently at work. Lonnigan saw, however, that the lad seemed to be watching him closely, and his suspicion grew. "Have a care, there, I warn ye again, lad," he growled, "have a care or I'll be up to the boss, and—ye know what I mean." The boy sullenly denied that he had been at any pranks, and Lonnigan walked into the other room.

Mutiny almost broke out in the camp, sullen with its superstitious fear, and the men wasted no opportunity to make more trouble for Murchison, the accursed. Even a threat from Lonnigan failed—a hint that he would bring McNair to the works—and still their petty annoyances continued. Then McNair heard of the trouble and posted up to camp.

"What's this I hear?" he demanded wrathfully. "Is there mutiny?"

"No—not yet," answered Murchison, "but there will be if I hang on. I'm going to quit."

McNair raised a hairy fist, and brought it down with a crash on the table. "Ye'll do naught o' the kind!" he roared. "Ye'll stay, if I have, be me own hand, to throttle every dog in the consarn."

He strode into the main room, still shaking his fist, and there delivered a harangue and a threat that left each man with a flea in his ear. "I'll stay," said Murchison, "but I warn ye it's agin yer own intrust."

Through these delays the drive was late. It got forward slowly, and was still behind when the high-water began subsiding. Murchison watched the river eagerly, saw it falling inch by inch, and with a sickening heart noticed how the driving crews lagged at their work. As they neared the gorge his terrors grew. "They'll hang it up—they'll hang up the drive," he muttered to himself, studying the fallen river. McNair sent up word that he was coming, and with feverish activity Murchison plied up and down the river, exhorting the crews. At length they caught the infection of his fear that the logs would be left stranded by the water, and in their eagerness turned the whole drive at the same moment into the narrow channel above the jaws.

The press of logs shot onward, gritting and heaving in the strain. "Hold back, there!" cried Murchison, in a wild excitement. "Hold back!" He saw the channel choking, and the gang with their pick-poles striving to stem the drive's advance. But the current inexorably pushed them on. Then a log lodged for an instant—snapped under the strain with a resounding detonation, another followed in its place, buckled mightily, and held! Log after log piled upon it. Grinding and roaring with a heavy thunder they fell upon the breastwork, and the water, gushing upward, spumed high into the air.

Murchison sat down upon the bank and buried his face in his hands. This, then, was the end. But even in his distress he felt a sense of relief that he was freed now from responsibility, although, indeed, it meant his ruin. The drive was hung up! The men gathered in groups upon the edge

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of the jam, silent in the face of the calamity, and still the logs from above pressed like giant jack-straws upon the abattis in the river bed.

"What's this?" roared a high voice, following with a curse. Murchison looked up, and above him stood McNair beholding the drive with black anger. "What's this—fine work—eh? The drive hung up! And is it this way that ye'd be savin' storage and boom rates, Murchison, on a million and a half o' me timber?" He cried this contemptuous jibe, pale with anger, and the foreman asked weakly what was to be done.

"Bring down the gangs!" shouted McNair, and the men came pouring along from the upper river. "See that?" he roared. "Git to yer work! Ye'll break that jam, or—" this with an oath—"I'll close this river to the last dog o' ye for another season's work. Away to it!"

Murchison raised a hand, but McNair gave no heed. "Ye hear me!" he roared. "Get down to it." The men started down the bank, and after a look at the water, jetting high over the press of logs, pulled back, hesitating. McNair, beside himself, rushed toward them, and the foreman followed.

"It's death, perhaps!" cried Murchison. "Stand back!" He seized an axe, and alone leaped from log to log out into the centre of the crush of timber. The key log that locked the entire jam lay under the brow of the high-piled timber.

"A rope—pass a rope!" cried Murchison. They threw him the bight of a bateau line, and he slipped it over his shoulders.

"SO THE GANGS WENT TO THE RIVER MORE SULLEN THAN EVER, WITH MURCHISON, HIS SHOULDERS SQUARED, STRIDING ON AHEAD."

"Stand by to be ready," he called, and then above the many voices of the pent-up stream they heard the clipping strokes of his axe.

The top logs hung poised, and beneath plied the man, striking masterfully, while the crew looked on, bending forward to peer through the web of spray that clouded the centre of the press. Then they heard the creak of timber—a mighty crash—a roaring and rending of the logs, and out of the chaos came Murchison, leaping like a deer. Hand over hand the crew drew in the slack of line; the jam burst and the whole

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world about them trembled under its tread, as the mighty timbers went beating and bounding down the slope before the raging water. High flew the spray; they saw Murchison totter—slip upon a slimy, rotten last year's butt—and as he stumbled forward, blinded by the spray, strong hands reached out and snatched him from the jaws of death. Half fainting, he stood there, leaning upon McNair's shoulders, and as he tried to draw his wits together, a slim quavering voice came floating down the air. "Black Murchison—Black Murchison—not yet?—not *yet?*"

The crew fell back, their glances shooting in every direction. "Black Murchison—Black——"

Lonnigan, at the second call, leaped into the woods, making straight for a heavy windfall near at hand. He jumped the fallen tree, and, circling the root, fell with a cry upon the figure crouching there. "I've got ye!" he cried, his grip tightening, and with that he yanked to his feet young Denny Ferguson. The imp fought, biting and kicking to free himself, but Lonnigan dragged him to the river. "This is him that did it," he roared exultantly. "This here is yer ghost." And, gripping the boy anew, he shook him as a marten worries a chipmunk, till the teeth of Denny Ferguson rattled in his head.

"Oh," said McNair, "and it's ye agin—is it, eh, me bonny lad?" He turned to the crew, his hand pointing toward the boy. "Listen, men,—d'ye know how Ferguson was kept this year—him that set a death-trap for Murchison? 'Twas Murchison—Black Murchison ye call him—'twas him that paid the bills. 'Twas him that got this snarlin' young deevil a job on the works—him that kept the lad when I would turn him out o' camp! D'ye hear?"

There was sudden stir among the crew. "Three cheers for Murchison!" roared a voice. "Three cheers, men!"

The foreman turned aside, gripping Lonnigan by the arm. "I'll praise God for that," he muttered, "though it came late." He faced the river, his brow unclouded, now, for the first time in months; and waved a hand toward the rafts of timber ripping by on the heavy current. "Keep 'em going, men," he shouted cheerily—and then to Lonnigan, "Eh, Tom, will you step down with me to the lower end, and lend a hand there? Lord, see 'em work!"

Down the river went the drive, the men shouting, and the black logs slipping swiftly by on their way to the mills.

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LEMON ORCHARD IN SOUTHERN CALIFORNIA RUINED BY WHITE SCALE.

FIGHTING PESTS WITH INSECT ALLIES.

HOW THE ENTOMOLOGISTS SAVED THE CALIFORNIA ORANGE-GROWERS FROM RUIN—"LADYBIRDS" IMPORTED FROM AUSTRALIA TO KILL OFF THE WHITE SCALES—EACH LADYBIRD PRODUCES SEVENTY-FIVE BILLION OTHERS IN SIX MONTHS, AND ALL FEED ON NOTHING BUT WHITE SCALES—GRASSHOPPERS KEPT DOWN BY A FUNGUS—ONE BIG INDUSTRY CREATED BY AN IMPORTED INSECT—THE WHOLE WORLD SEARCHED FOR ENEMIES OF SPECIAL PESTS.*

By L. O. Howard,

Chief of the Division of Entomology, United States Department of Agriculture.

SOME twenty-five years ago there appeared suddenly upon certain acacia trees at Menlo Park, California, a very destructive scale bug. It rapidly increased and spread from tree to tree, attacking apples, figs, pomegranates, quinces, and roses, and many other trees and plants, but seeming to prefer to all other food the beautiful orange and lemon trees which grow so luxuriantly on the Pacific Coast, and from which a large share of the income of so many fruit-growers is gained. This

* It has been very customary to poke fun at some of the more detailed labors of our Department of Agriculture, and to question scornfully what use the mass of data collected could be to the practical farmer. The few instances here given of the Department's work (showing how the Government scientists have repeatedly saved the fruit-growers from utter ruin and have made it possible to build up great agricultural industries) form an apt answer to such short-sighted criticisms.

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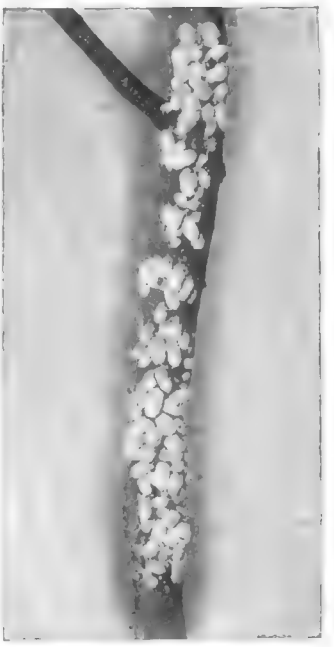
insect, which came to be known as the *white scale* or *fluted scale* or the *Icerya* (from its scientific name), was an insignificant creature in itself, resembling a small bit of fluted white wax a little more than a quarter of an inch long. But when the scales had once taken possession of a tree, they swarmed over it until the bark was hidden, they sucked its sap through their minute beaks until the plant became so feeble that the leaves and young fruit dropped off, a hideous black smut-fungus crept over the young twigs, and the weakened tree gradually died.

In this way orchard after orchard of oranges, worth a thousand dollars or more an acre, was utterly destroyed. the best fruit-growing sections of the State were invaded, and ruin stared many a fruit-grower in the face. This spread of the pest was gradual, extending through a series of years, and not until 1886 did it become so serious a matter as to attract national attention.

In this year an investigation was begun by the late Professor C. V. Riley, the Government entomologist then connected with the Department of Agriculture at Washington. He sent two agents to California, both of whom immediately began to study the problem of remedies. In 1887 he visited California himself, and during that year published an elaborate report giving the results of the work up to that point. The complete life-history of the insect had been worked out, and a number of washes had been discovered which could be applied to the trees in the form of a spray, and which would kill a large proportion of the pests at a comparatively small expense. But it was soon found that the average fruit-grower would not take the trouble to spray his trees, largely from the fact that he had experimented for some years with inferior washes and quack nostrums, and from lack of success had become disgusted with the whole idea of using liquid compounds. Something easier, something more radical was necessary in his disheartened condition.



THE ICERYA, KNOWN AS WHITE, OR FLUTED, SCALE, ON TWIG OF ORANGE.

Meantime, after much sifting of evidence and much correspondence with naturalists in many parts of the world, Professor Riley had decided that the white scale was a native of Australia, and had been first brought over to California accidentally upon Australian plants. In the same way it was found to have reached South Africa and New Zealand, in both of which colonies it had greatly increased, and had become just such a pest as it is in California. In Australia, however, its native home, it did not seem to be abundant, and was not known as a pest—a somewhat surprising state of affairs, which put the entomologist on the track of the results which proved of such great value to California. He reasoned that, in its native home, with the same food plants upon which it flourished abroad in such great abundance, it would undoubtedly do the same damage that it does in South Africa, New Zealand, and California, if there were not in Australia some natural enemy, probably some insect parasite or predatory beetle, which killed it off. It became therefore important to send a trained man to Australia to investigate this promising line.

After many difficulties in arranging preliminaries relating to the payment of expenses (in which finally the Department of State kindly assisted), one of Professor Riley's assistants, a young German named Albert Koebele, who had been with him for a number of years, finally sailed for Australia in August, 1888. Koebele was a skilled collector and an admirable man for the purpose. He at once found that Professor Riley's supposition was correct: there existed in Australia small flies which laid their eggs in the white scales, and these eggs hatched into grubs which devoured the pests. He also found a remarkable little ladybird, a small reddish-brown convex beetle, which breeds with marvellous rapidity and which, with

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voracious appetite and at the same time with discriminating taste, devours scale after scale, but eats fluted scales only—does not attack other insects. This beneficial creature, now known as the Australian ladybird, or the Vedalia, Mr. Koebele at once began to collect in large numbers, together with several other insects found doing the same work. He packed many hundreds of living specimens of the ladybird, with plenty of food, in tin boxes, and had them placed on ice in the ice-box of the steamer at Sidney; they were carried carefully to California, where they were liberated upon orange trees at Los Angeles.

VEDALIA, OR AUSTRALIAN LADYBIRD.

These sendings were repeated for several months, and Mr. Koebele, on his return in April, 1889, brought with him many more living specimens which he had collected on his way home in New Zealand, where the same Vedalia had been accidentally introduced a year or so before.

The result more than justified the most sanguine expectations. The ladybirds reached Los Angeles alive, and, with appetites sharpened by their long ocean voyage, immediately fell upon the devoted scales and devoured them one after another almost without rest. Their hunger temporarily satisfied, they began to lay eggs. These eggs hatched in a few days into active grub-like creatures—the larvæ of the beetles—and these grubs proved as voracious as their parents. They devoured the scales right and left, and in less than a month transformed once more to beetles.

And so the work of extermination went on. Each female beetle laid on an average 300 eggs, and each of these eggs hatched into a hungry larva. Supposing that one-half of these larvæ produced female beetles, a simple calculation will show that in six months a single ladybird became the ancestor of 75,000,000,000 of other ladybirds, each capable of destroying very many scale insects.

Is it any wonder, then, that the fluted scales soon began to disappear? Is it any wonder that orchard after orchard was entirely freed from the pest, until now over a large section of the State hardly an Icerya is to be found? And could a more striking illustration of the value of the study of insects possibly be instanced? In less than a year from the time when the first of these hungry Australians was liberated from his box in Los Angeles the orange trees were once more in bloom and were resuming their old-time verdure—the Icerya had become practically a thing of the past.

LARVÆ OF VEDALIA EATING WHITE SCALE.

This wonderful success encouraged other efforts in the same direction. The State of California some years later sent the same entomologist, Koebele, to Australia to search for some insect enemy of the black scale, an insect which threatened the destruction of the extensive olive orchards of California. He found and successfully introduced another ladybird beetle, known as *Rhizobius ventralis*, a little dark-colored creature which has thrived in the California climate, especially near the seacoast, and in the damp air of those regions has successfully held the black scale in check. It was found, however, that back from the seacoast this insect did not seem to thrive with the same vigor, and the black scale held its own—in some places more than held its own. Then a spirited controversy sprung up among the olive-growers, those near the seacoast contending that the Rhizobius was a perfect remedy for the scale, while those inland insisted that it was worthless. A few years later it was discovered that this olive enemy in South Europe is killed by a little caterpillar which burrows through scale after scale, eating out their contents, and an effort was made to introduce the caterpillar into California, but these efforts failed. Within the past two years it has been found that a small parasitic fly exists in South Africa which lays its eggs in this same black scale, and its grub-like larvæ eat out the bodies of the scales and destroy them. The climate of the region in which this parasite exists is dry through a large part of the year, and therefore this little parasitic fly, known as Scutellista, was thought to be the needed insect for the dry California regions. With the help of Mr. C. P. Lounsbury, the Government entomologist of Cape Colony, living specimens of this fly were brought to this country, and were colonized in the Santa Clara Valley near San José, California, where they have perpetuated

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themselves and destroyed many of the black scales, and promise to be most successful in their warfare against the injurious insect.

This same Scutellista parasite had, curiously enough, been previously introduced in an accidental manner into Italy, probably from India, and probably in scale-insects living on ornamental plants brought from India. But in Italy it lives commonly in another scale insect, and with the assistance of the learned Italian, Professor Antonio Berlese, the writer made an unsuccessful attempt to introduce and establish it a year earlier in some of our Southern States, where it was hoped it would destroy certain injurious insects known as "wax scales." The Scutellista is well shown in the cut on the next page.

In the meantime, the United States, not content with keeping all the good things to herself, has spread the first ladybird imported—the Vedalia—to other countries. Four years ago the white scale was present in enormous numbers in orange groves on the left bank of the river Tagus, in Portugal, and threatened to wipe out the orange-growing industry in that country. The California people, in pursuance of a far-sighted policy, had with great difficulty, owing to lack of food, kept alive some colonies of the beneficial beetle, and specimens were sent to Portugal which reached there alive and flourishing. They were tended for a short time, and then liberated in the orange groves, with precisely the same result as in California. In a few months the scale insects were almost entirely destroyed, and the Portuguese orange-growers saved from enormous loss.

TWIG OF OLIVE INFECTED WITH BLACK SCALE.

This good result in Portugal was not accomplished without opposition. It was tried experimentally at the advice of the writer, and in the face of great incredulity on the part of certain Portuguese newspapers and of some officials. By many prominent persons the account published of the work of the insect in the United States was considered as untrustworthy, and simply another instance of American *réclame* (brag). But the opposition was overruled, and the triumphant result silenced all opposition. It is safe to say that the general opinion among Portuguese orange-growers to-day is very favorable to American enterprise and practical scientific acumen.

The Vedalia was earlier sent to the people in Alexandria and Cairo, Egypt, where a similar scale was damaging the fig trees and other valuable plants, and the result was again the same, the injurious insects were destroyed. This was achieved only after extensive correspondence and several failures. The active agent in Alexandria was Rear Admiral Blomfield, of the British Royal Navy, a man apparently of wide information, good judgment, and great energy.

The same thing occurred when the California people sent this savior of horticulture to South Africa, where the white scale had also made its appearance.

It is not only beneficial insects, however, which are being imported, but diseases of injurious insects. In South Africa the colonists suffer severely from swarms of migratory grasshoppers which fly from the north and destroy their crops. They have discovered out there a fungus disease which under favorable conditions kills off the grasshoppers in enormous numbers. At the Bacteriological Institute in Grahamstown, Natal, they have cultivated this fungus in culture tubes, and have carried it successfully throughout the whole year; and they have used it practically by distributing these culture tubes wherever swarms of grasshoppers settle and lay their eggs. The disease, once started in an army of young grasshoppers, soon reduces them to harmless numbers. The United States Government last year secured culture tubes of this disease, and experiments carried on in Colorado and in Mississippi show that the vitality of the fungus had not been destroyed by its long ocean voyage, and many grasshoppers were killed by its spread. During the past winter other cultures were brought over from Cape Colony, and the fungus is being propagated in the Department of Agriculture for distribution during the coming summer in parts of the country where grasshoppers may prove to be destructively abundant.

Although we practically no longer have those tremendous swarms of migratory grasshoppers which used to come down like devastating armies in certain of our Western States and in a night devour everything green (even the Irish servant-girls, as those who joke over serious matters used to say), still, almost every year, and especially

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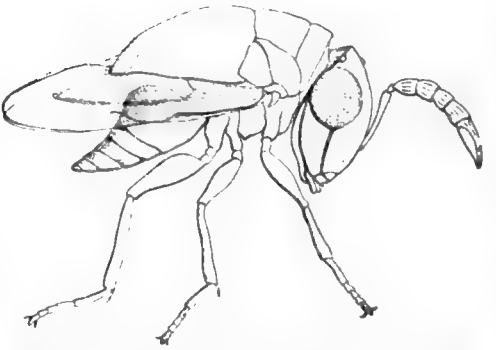
in the West and South, there is somewhere a multiplication of grasshoppers to a very injurious degree, and it is hoped that the introduced fungus can be used in such cases.

Persons officially engaged in searching for remedies for injurious insects all over the world have banded themselves together in a society known as the Association of Economic Entomologists. They are constantly interchanging ideas regarding the destruction of insects, and at present active movements are on foot in this direction of interchanging beneficial insects. Entomologists in Europe will try the coming summer to send to the United States living specimens of a tree-inhabiting beetle which eats the caterpillar of the gipsy moth, and which will undoubtedly also eat the caterpillar so common upon the shade-trees of our principal Eastern cities, which is known as the Tussock moth caterpillar. An entomologist from the United States, Mr. C. L. Marlatt, has started for Japan, China, and Java, for the purpose of trying to find the original home of the famous San José scale —an insect which has been doing enormous damage in the apple, pear, peach, and plum orchards of the United States—and if he finds the original home of this scale, it is hoped that some natural enemy or parasite will be discovered which can be introduced into the United States to the advantage of our fruit-growers. Professor Berlese, of Italy, and Dr. Reh, of Germany, will attempt the introduction into Europe of some of the parasites of injurious insects which occur in the United States, and particularly those of the woolly root-louse of the apple, known in Europe as the "American blight"—one of the few injurious insects which probably went to Europe from this country, and which in the United States is not so injurious as it is in Europe.



SCUTELLISTA, THE AFRICAN PARASITE OF THE BLACK SCALE.

It is a curious fact, by the way, that while we have had most of our very injurious insects from Europe, American insects, when accidentally introduced into Europe, do not seem to thrive. The insect just mentioned, and the famous grape-vine Phylloxera, a creature which caused France a greater economic loss than the enormous indemnity which she had to pay Germany after the Franco-Prussian War, are practically the only American insects with which we have been able to repay Europe for the insects which she has sent us. Climatic differences no doubt account for this strange fact, and our longer and warmer summers are the principal factor.

It is not alone the parasitic and predaceous insects which are beneficial. A new industry has been brought into the United States during the past two years by the introduction and acclimatization of the little insect which fertilizes the Smyrna fig in Mediterranean countries. The dried-fig industry in this country has never amounted to anything. The Smyrna fig has controlled the dried-fig markets of the world, but in California the Smyrna fig has never held its fruit, the young figs dropping from the trees without ripening. It was found that in Mediterranean regions a little insect known as the Blastophaga fertilizes the flowers of the Smyrna fig with pollen from the wild fig which it inhabits. The United States Department of Agriculture in the spring of 1899 imported successfully some of these insects through one of its travelling agents, Mr. W. T. Swingle, and the insect was successfully established at Fresno in the San Joaquin Valley. A far-sighted fruit-grower, Mr. George C. Roeding, of Fresno, had planted some years previously an orchard of 5,000 Smyrna fig trees and wild fig trees, and his place was the one chosen for the successful experiment. The little insect multiplied with astonishing rapidity, was carried successfully through the winter of 1899–1900, and in

RHIZOBIUS, THE IMPORTED ENEMY OF THE BLACK SCALE OF THE OLIVE.

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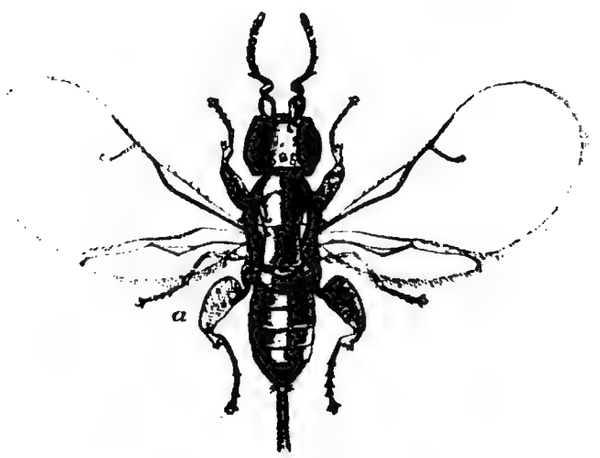
the summer of 1900 was present in such great numbers that it fertilized thousands of figs, and fifteen tons of them ripened. When these figs were dried and packed it was discovered that they were superior to the best imported figs. They contained more sugar and were of a finer flavor than those brought from Smyrna and Algeria. The Blastophaga has come to stay, and the prospects for a new and important industry are assured.

GRASSHOPPER DYING FROM FUNGUS DISEASE.

With all of these experiments the criticism is constantly made that unwittingly new and serious enemies to agriculture may be introduced. The unfortunate introduction of the English sparrow into this country is mentioned, and the equally unfortunate introduction of the East Indian mongoose into the West Indies as well. The fear is expressed that the beneficial parasitic insects, after they have destroyed the injurious insects, will either themselves attack valuable crops or do something else of an equally harmful nature. But there is no reason for such alarm. The English sparrow feeds on all sorts of things, and the East Indian mongoose, while it was introduced into Jamaica to kill snakes, was found, too late, to be also a very general feeder. As a matter of fact, after the snakes were destroyed, and even before, it attacked young pigs, kids, lambs, calves, puppies, and kittens, and also destroyed bananas, pine-apples, corn, sweet potatoes, cocoanuts, peas, sugar corn, meat, and salt provisions and fish. But with the parasitic and predatory insects the food habits are definite and fixed. They can live on nothing but their natural food, and in its absence they die. The Australian ladybird originally imported, for example, will feed upon nothing but scale insects of a particular genus, and, as a matter of fact, as soon as the fluted scales became scarce the California officials had the greatest difficulty in keeping the little beetles alive, and were actually obliged to cultivate for food the very insects which they were formerly so anxious to wipe out of existence! With the Scutellista parasite the same fact holds. The fly itself does not feed, and its young feed only upon certain scale insects, and so with all the rest.

All of these experiments are being carried on by men learned in the ways of insects, and only beneficial results, or at the very least negative ones, can follow. And even where only one such experiment out of a hundred is successful, what a saving it will mean!

We do not expect the time to come when the farmer, finding Hessian fly in his wheat, will have only to telegraph the nearest experiment station, "Send at once two dozen first-class parasites"; but in many cases, and with a number of different kinds of injurious insects, especially those introduced from foreign countries, it is probable that we can gain much relief by the introduction of their natural enemies from their original home.



THE IMPORTED FIG-FERTILIZING INSECT.

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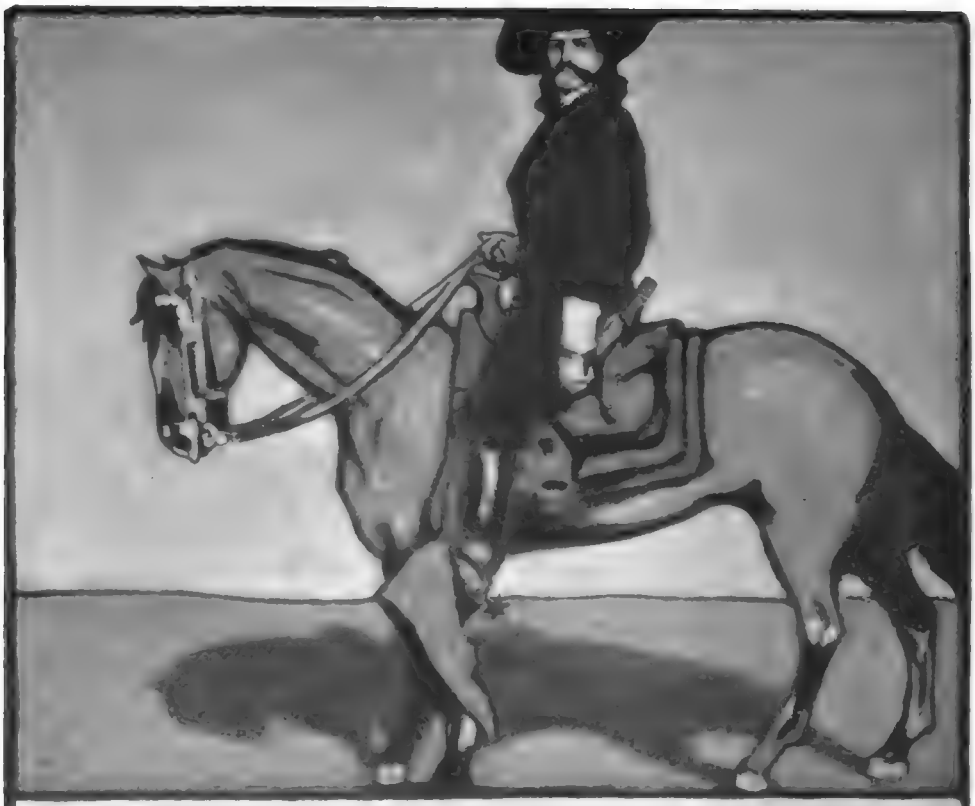

A SON OF THE BORDER

BY E. C. LITTLE

ILLUSTRATIONS BY JAMES M. PRESTON

FORTY years ago, in December, ten men on bay horses galloped across the dry bed of Rock Creek, skirted a little clump of cottonwoods, and drew rein before the bars of the Overland Stage Company's horse corral on the California trail a few miles north of Manhattan. Bill McKandlas, jumping from his horse, put his hand on the top bar. A tall, slender young man stepped to the door of the dug-out a few yards away with a gun in his hand, and eyed the McKandlas gang with dark disfavor. He called out with some emphasis that he would shoot the first man who took down a bar, and made some comments on their parentage. A few hours before they had gone by his quarters jerking an old preacher at the end of a lariat. As they passed they announced that they would come back for the stage horses in the corral at three o'clock in the afternoon. The young man with the gun had replied that he would be there when they came back. He was paid to feed, harness, and protect the company's property, and intended to earn his money. The ten visiting gentlemen tied their horses to the corral, and turned to the more cheerful duty of exterminating the imprudent and forward young watchman. He retired into his dug-out domicile, barred the door, and stood waiting with a rifle in his hand. Even then he had the habit of not shooting until the occasion really demanded it. The highwaymen hunted up a log from among the cottonwoods, and with praiseworthy industry proceeded to batter down the door.

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Jim McKandlas, with a revolver, a bowie-knife, a whoop, and a yell leaped across the threshold and into eternity. As the others rushed through the door the man inside fired three shots, with that accuracy of aim for which he was so much admired in the years that were to come. The six somewhat startled horse thieves who remained alive swarmed across the dug-out floor, and piled upon the young station keeper with revolvers and bowie-knives. One beat him over the head with a gun, and Bill McKandlas struck with a bowie-knife, only to bury it in the table, and with a bullet in his heart, to suddenly terminate a career which had furnished an infinite variety of interest for the sheriffs and vigilants of several counties. The rusty stove fell from its insecure foundation across the surging combatants, mixed in inextricable and sanguinary confusion. Outside a horse broke his hitching strap and galloped away. The little table broke down beneath the weight of a thousand pounds of shooting, stabbing, swearing frontiersmen. The fattest bandit rolled toward the door, and catching a glimpse of the brown prairies outside, which looked good to him, suddenly reached the conclusion that he did not really need any stage company horses in his business and bolted.

By this time the affair had ceased to have for the other four horse fanciers that enticing interest which had drawn them into it. As he afterwards expressed it, the young man in charge of the stage station had "gone wild." Covered with wounds and freckled with bullet holes he had lost every thought and instinct except the lust of death and victory. As they fought he struck the sixth man in the throat with the bowie, and the man fell across the little pile of blankets. The three who were now on their feet retreated through the door and toward their horses, their host staggering after them with the gleam of battle still in his blue eye. That morning his associate in the company's service had gone hunting, to return on the run barely in time to witness the close of the tragedy. Doc Mills, the associate, had lost a golden opportunity. While he was out shooting quail, Fame had knocked at the dug-out door, handed a laurel to James Butler Hickok, and passed on. Hickok wrested the gun from Mills's hand, and killed another of his fleeing foes before they were fifty yards away. One, badly wounded, sped down the little creek, found his way to Manhattan, and died within two days. The ninth, more fortunate, mounted a horse, and followed the fat deserter across the prairie.

When the stage from the East came rumbling in, half an hour later, they found this hero of the most savage and the most remarkable conflict in border annals insensible and at the point of death. The floor of his dug-out looked like the deck of a viking's warship after a glorious triumph. Six months elapsed before he recovered. He had beaten ten men in a fair fight, killing eight of them, but he had won his fight, saved his employer's property, and henceforth he was "Wild Bill" for all time.

At the close of the Civil War all the restless and adventurous energy of the country entered on the plains of Kansas and Nebraska as its rightful heritage. Three great railroads were built from the Missouri to the mountains. The collapse of the Confederacy disbanded the army market for the long-horned cattle of Texas. Refused a right of way through Missouri for fear of the Spanish fever, the Texas drovers brought their vast herds across the Indian Territory, over the Arkansas, to the newly built railroads of Kansas. Hays City succeeded Kansas City, Westport, St. Joseph, and St. Louis as the outfitting point and metropolis of those who sought the buffalo, the Indian, and all the mysteries of the border. Abilene, soon to be followed by Ellsworth, Newton, Wichita, and Dodge City, became the greatest cattle shipping mart in the world. Three hundred thousand Texas cattle came there in seventy, and more in seventy-one. Those were the halcyon days of the saloon keeper, the gambler, the scarlet woman, the cowboy, and the bad man, a return of the period when Capet, and Hapsburg, and Robin Hood, and Front de Bœuf, sword in hand, won for themselves fortunes and thrones and scaffolds. To further complicate the conditions, and add to the air of a general storm centre, a Yankee sailor named Colt had recently discovered that a revolving cylinder, with six holes in it attached to one end of a pistol barrel, enables a man to fire six shots without pausing to load. This insignia of royalty made a little man as big as a big man. Those who wished to crowd modern civilization into this primeval epoch soon discovered that he who keeps the peace is the most essential and valuable adjunct to civilization.

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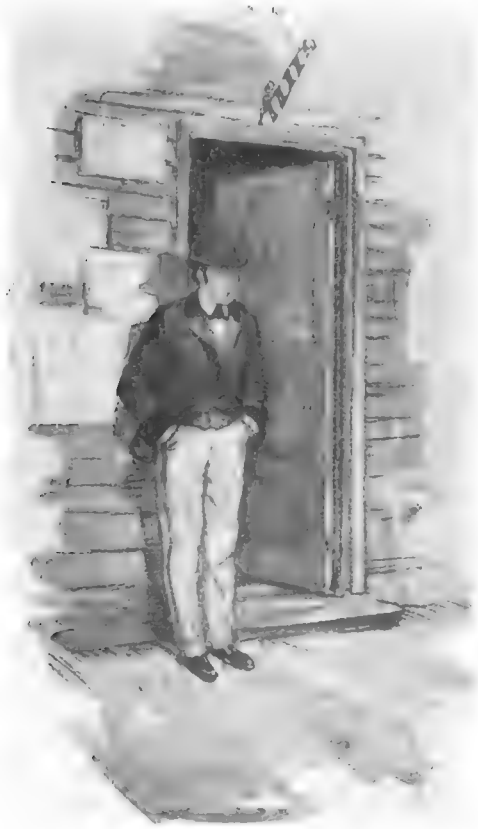
The bad man is not necessarily bad at all. He is often a very good fellow. Bad is merely a synonym for dangerous. The "bad" man was formerly the "good" man. He is simply the frontiersman whose evolution has kept pace with that of the firearm—product of the border and the six-shooter. Keen of eye, quick of hand, and strong of will, he has that supremacy which always comes to the man of cool and clear-headed personal valor everywhere, except in society's latest and most refined development. The term was used rather to express the feeling that he was, in the vernacular of the border, "a bad man to monkey with." To govern and control communities in which vicious men were not infrequent, where all



"A LATE ARRIVAL . . . WATCHED A COWBOY GO BY."

were restless and the majority turbulent, the ordinary forms and servants of justice were inadequate. Law and order required the assistance of officers who, though enlisted to keep the peace, did not hesitate to be a law unto themselves. If civilization was afraid to endorse their actions, it was at least proud of the results of the labors of the peace officer of the border. Hickok, Tom Smith, Patrick Shugrue, Michael Shugrue, William Tighlman, Hector Thomas, and a score of other men as marshals, sheriffs, and deputies enforced the law, made life safe and property secure, and brought order out of chaos by their ready courage and good sense. As Wild Bill Hickok was the original, so was he the first of the class.

The Hickoks came from Scotland, settled in Vermont, fought under Ethan Allen, migrated to New York, to Illinois, and scattered through the West, respectable and successful. James Butler Hickok was born May 27, 1837, at Troy Grove, La Salle County, Illinois. In 1855 he went to St. Louis and up the Missouri on a steamboat to Leavenworth, where as a boy he embarked in the active and moving life of the Kansas border, serving with the Free State men. A Missourian queried, "What mout your name be, stranger?" The youthful sprout of Yankeedom sarcastically answered that "it mout be Bill," and Bill it became. Taking a 160-acre claim two years later in the Kaw Valley, in Monticello Township, Johnson County, Kansas, his neighbors promptly recognized his merits by selecting him as constable, and the Missourians as promptly showed their appreciation of his characteristics and good marksmanship by burning his first and second cabins. This discouraged his agricultural ambitions. He abandoned his claim, took a six-shooter for his coat of arms, adopted for his motto, "*Noli me tangere*," of which his interpretation was, "If you see a man looking for trouble accommodate him," and set forth to conquer the world. Like a Knight of the Round Table, he felt himself to be widely commissioned by nature in parlous times and among rough men, to protect the innocent, to punish the guilty, and to keep the peace. The many personal encounters in which he was engaged for two decades with wild animals, wild Indians, and other border men, were thus necessary to determine the authenticity of his commission and the extent of his jurisdiction.

For twenty years Wild Bill lived the strenuous, not to say the tumultuous, life. During most of the three years that preceded the Civil War he drove stage for the Overland, and freight wagons for Majors, Rus-

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"HE HAD BEATEN TEN MEN IN A FAIR FIGHT . . . AND HENCEFORTH HE WAS 'WILD BILL' FOR ALL TIME."

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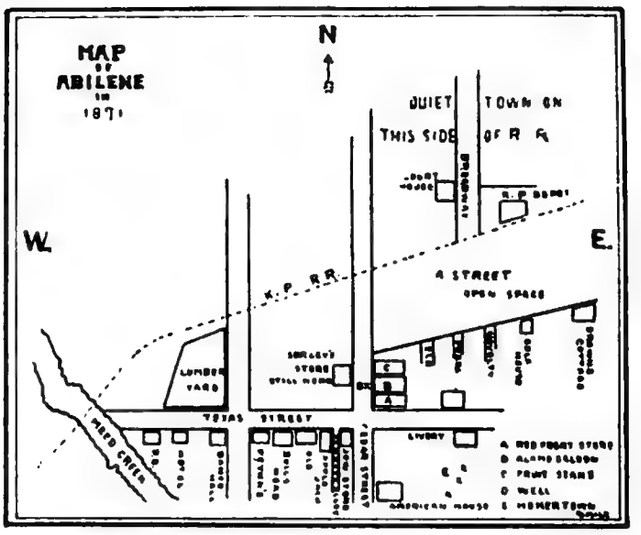
sell & Waddell, from the Missouri to Santa Fé, Denver, and Salt Lake, fighting bears, Indians, and highwaymen as he rode. In 1861 he enlisted in the Union army as a wagon master, serving at Pea Ridge as a sharpshooter, and was employed as a Union scout and spy during the last two years of the war. At the close of the rebellion he passed considerable time in Nebraska among the Sioux, hunting and trapping, and a few months at Springfield, Missouri. In 1868 he reëntered the service and commanded a band of scouts through the Cheyenne War. He was in charge of a cavalcade of government officials who visited the Indian tribes accompanied by Henry M. Stanley, the African explorer, then a newspaper correspondent, who exploited Bill's adventures in the Eastern dailies. He had charge of Vice-President Henry Wilson's party on their tour, receiving the generous commendation of that distinguished statesman. He fought and killed Dave Tutt in a duel on the public square at Springfield, Missouri. In Nebraska he engaged in a duel with four bad men who "didn't like his style," and slew three of them.



In March, 1869, in a fight with Black Kettle's Cheyennes on the Washita River, in the Indian Territory, he broke through the cordon of Indians, and killed Black Kettle in personal conflict, coming away with a poisoned spear-tip in his hip. At the close of '69 he turned his attention toward the preservation of peace, and became deputy sheriff and city marshal at Hays City, Kansas, which had become the successor of St. Louis, St. Joseph, Westport, and Kansas City as the outfitting point for those who went out on the plains. He had graduated and received his diploma as a past master of the art of fighting wild animals, wild Indians, highwaymen, and soldiers in arms, and was now to settle down to a less romantic duty. Ex-Senator Simon Motz says: "Hickok was the only officer who was able to maintain order among the mule punchers, bull whackers, and tough soldiers at Hays City. Some respected, some feared him, and occasionally his six-shooter brought order and a new grave or two in Boot Hill Cemetery."

Up at Abilene Joseph G. McCoy, an Illinois cattle man, had secured a contract from the Kansas Pacific that he was to have one-eighth of all their Abilene receipts for cattle shipments for a term of years, and had worked the cattle trade to that lonesome little station. Theodore C. Henry, afterwards wheat king in Kansas and capitalist and promoter in Colorado, with the other village trustees had inaugurated a reign of law and order, but this happy condition was terminated by the killing of Marshal Tom Smith, their gallant champion, who had gone into the country to arrest a couple of cattle rustlers, and was shot and chopped to death. Then riot ruled again. McCoy became mayor and sent for Hickok, who came to Abilene at $175 a month as marshal. There he was destined to kill his last man and close the aggressive side of his career of justifiable homicide.

Abilene's friends still fondly insist that in its Texas cattle days it was the wickedest town on earth. Located just off the long trail that led from their Southern homes, across the Indian Territory and the Arkansas, the cowboys sought it to enliven the enforced monotony of that long and dusty journey. The song of the siren, the click of the little blue chips, the white apron of the barkeeper, the flying heels of the short-gowned ladies in the theatre furnished ready entertainment, which was, however, insufficient for those convivial spirits who ran the town without a limit. Drinking, gaming, shooting through the houses, they gave themselves up to a fantastic delirium of recklessness. Young men of ambitious minds, filled up with raw whiskey, rode through town firing at anything their excitement suggested. Reckless drovers and more reckless cyprians revelled night and day in the dance halls. This village of less than 1,000 permanent inhab-

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itants licensed thirty-two saloons in one month, twenty of them within the brief limits of a single block. Frequently there were 5,000 visitors within its hospitable doors. A man counted 2,500 in the saloons and stores in one block at one time in the afternoon. The cowboys crowded the Alamo and listened with eager ears to the music which the Italian and his wife picked out of the violin and piano on the platform in the corner. At Tom Downey's the bowling alley was occupied day and night. The billiard tables of the Old-fruit were always busy. Great stacks of coin were piled invitingly on the little round gaming tables in the Applejack. They filled the Bull's Head and bucked its faro banks with alacrity and considerable success. The Novelty Theatre gave an entertainment which lasted longer and made more noise than any vaudeville in New York.

People came to Abilene from all parts of the known world, from Chicago to the Rio Grande. The buildings were one-story high, of wood, and with elevated fronts giving the effect of two-story houses. Great stocks of goods were on sale, and California fruits crowded the market. Little bootblacks came from Kansas City to get their hands in the hatful of money. Rows were of daily, of momentary occurrence. A late arrival stood in the door of a barber shop and watched a cowboy go by. The "bad man" disliked the attention, and shot the stranger in the stomach, to "learn him a little good manners," he said. The stranger seemed surprised, but got well. In the American House one night seventeen-year-old "Arkansaw" fired through a wooden partition, and killed a man he never saw, because this neighbor snored. Those were good old days!

In September, 1871, the good people of Dickinson County had reached the definite conclusion that theirs was a farming country, and proceeded to emphasize this opinion by giving an old-fashioned country fair at Abilene. Six hundred thousand long-horns came up from Texas that year, but their owners took the hint, and understood that there would be no room for their stock on the prairies of that county next season. They had sold their cattle, and were ready to depart. Abilene was to be their stamping ground no more. It was in order to celebrate the occasion in the old-time way, and it was generally understood that the ceremonies of the evening were to be concluded by killing Wild Bill, and, metaphorically, taking his scalp back to Texas. I have been told that a few of them drew lots as to which should have that dangerous honor, and that Philip Coe got the short straw. Six feet and some inches high, extensive of girth, commanding in appearance, Coe was a gambler by profession, and a rough, overbearing jollier by habit. In the back room of the Bull's Head he had opened a faro bank, which by instruction of the city fathers Hickok had compelled him to bring out in the front room, to avoid the drugging and robbing of innocents. With a square game and an even run for their money the cowboys broke the bank, and Coe had a grievance. Possibly there was a certain amount of antagonism between the ex-Confederates and a former Union soldier like Hickok, but every "bad man" in the region cherished the ambition to be able to say that he had killed Wild Bill.

It was a beautiful autumn day, and the county fair was a great success. No disturbance of moment occurred, but the Texas men decided to furnish fireworks for the evening. Though not invited, they were expected. Two small boys coming home from the fair met Policeman Jim Gainsford with a sawed-off-double-barrel shotgun under his arm. As they passed the Alamo, Policeman Mike Williams was chatting pleasantly with the pretty girl who sold fruit at the stand tucked in the little corner next that institution on the north. To the south the Red Front was filled with country customers. A young farmer watered his horse at the well-curb just in front of the saloon, the only present relic of that famous fight. A wooden awning covered the broad wooden sidewalk. The Alamo had a front of fifty or sixty feet, all doors, and the doors were mostly glass, and always open. The handsome bar and mirror were on the south side, and the music platform in the southeast corner. The rest of the floor space was taken up with little round gaming tables, where sporting men waited for the unwary cowboy. An ordinary door opened into the vacant space at the rear, and a path behind the Elkhorn, the Pearl, and several little restaurants led to the side entrance of the Novelty Concert and Dance Hall a few rods off. One small boy whispered, "There'll be a fight tonight." Two hours later their father blew

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AT MRS. SMITH'S RESTAURANT TABLE.

out the lights and sent the family to bed, not caring to furnish a target for ambitious marksmen.

As the sun went down Pat McGonigal and his brother tied their bronchos in front of the Drover's Cottage, strolled down Texas Street, and met their friends, and the fun began. A dozen cowmen picked up Jake Karatosky, the little Jew merchant, carried him down to the Applejack, and had him "set up the drinks." This was an improvement on the year before, when they lassoed his chief clerk and carried him off for fun. A score of more or less prominent citizens and cattlemen were used in the same manner and in quick succession. If they did not enjoy it, they pretended to. The crowd increased, and the liquor and excitement spread. The cowboys were giving Abilene her last Roman holiday. The crack of an occasional pistol accentuated the interest. Wild Bill was found dining at Mrs. Smith's restaurant table, and the roisterers jocosely stated their intention of dragging him to the bar. Bill said they might go to the Novelty bar and "get a drink on him," but pointedly declined to accompany them, and called particular attention to the ordinance against shooting in the city limits. By ten o'clock at night the mob surged from one end of Texas Street to the other in reckless abandon. Everybody that claimed to be civilized hunted cover. Marshal Hickok and Policeman Williams were watching at the Novelty, where generally there was the most friction.

It was about this time that big Phil Coe, keeping faith with his comrades, but with no eager avidity, leisurely walked up in front of the Alamo, then packed with excited men, and fired his pistol at a dog, as he claimed. Wild Bill told Williams to stay at the Novelty, ran swiftly across to the rear door, sprang into the crowded Alamo, roughly inquiring as to who was doing this shooting. In terse and vigorous language he talked to Dunbar of the Alamo, roundly denouncing the whole business. He declared that the cowboys had promised him there should be no shooting if he allowed this one last round-up. Coe stood at the well-curb outside as all this passed very quickly, and in response to Bill's second inquiry said that he had fired the shot. Immediately he fired another, which grazed Wild Bill's side as he stood at the bar. With that wonderful swiftness which stood him in good stead so many times, Bill threw two guns on Coe, shot him twice in the abdomen, exclaiming, "I've shot too low!" At the same instant he turned and fired twice at another man, who came running down the dark sidewalk from the north, and burst on the scene, shoving two pistols in front of him. Coe fired one more shot and fell across the well-curb. A hundred

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WILD BILL KILLS HIS BEST FRIEND BY MISTAKE.

guns clicked as Wild Bill fired his first shot, but before he had fired his fourth the room was cleared, and not one bad man was left to stand by Coe. The stranger, with two bullets within an inch of his heart, threw both hands in the air, dropped his pistols to the floor, and pitched forward stone dead. It was Mike Williams, the deputy, a brave fellow, who despite his chief's instructions to stay at the Novelty could not keep away from the fight. Wild Bill cried out that he had killed his best friend, gathered the little man in his arms, and with eyes full of tears laid him across a poker table. Long years of combat had so little deadened his sensibilities, that the next day I saw his face still pinched and white as a sheet over this death of his friend, the last man he ever killed. But the fury that burned in his veins when he whipped the McKandlas gang sprung to life again at this accident, and he proceeded to hold the Texas men responsible. That night the desperate heroes of border strife hid in cellars and sunflower patches, or on swift ponies found their way to their cattle camps. For they had broken up the fountains of the great deep of wrath of the descendant of the Covenanter and the Yankee, and the blue-eyed son of the border had "gone wild" again. Hickok paused in his night's work to rout a clergyman out of bed for the wounded Texan, who died like a philosopher and a fighting man, as others of his kind had died at another Alamo a generation before.

They shipped Philip Coe's remains back to San Antonio; a dark-eyed woman who did not bear his name took the next train for the South; there was a hurried exit of cowboy, courtesan, and gambler, and it was finally decided that Dickinson County was a farming community and Abilene a law abiding city forever.

Five years later, in the summer of 1876, Hickok was prospecting for gold in the Black Hills. It was about the time of the Custer expedition, but the telegram that summoned Wild Bill to serve with Custer went astray, or he would have died just a month later with the long-haired brigadier, who spoke so well of him. He had no quarrel with any one in the Hills, but August 2, 1876, the man who sat across the little round table from him got up, dropped his cards, walked out the back door, in a moment entered another with a six-shooter in his hand, stepped behind Hickok, and shot him to death without a second's warning. So strong was his in-

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stinct of caution, so deft the hands that had kept him in frequent battle, that even as his head fell forward on the little gaming-table his hands had drawn both pistols, ivory-handled gifts of the Union Pacific Railway, half from their holsters. The assassin was actuated by the same silly vanity that moved the wicked fool who fired the Ephesian dome. He wished to be known as the man who killed Wild Bill. He was tried by a jury of his peers in the United States District Court, found guilty of murder, and hanged by the neck until dead. Nothing in the evidence or in the record of Hickok developed the slightest excuse for the deed. When asked at the trial why he had not given his victim a chance for his life, the murderer replied that he had no call to commit suicide, a very flattering but somewhat delayed and perfunctory compliment to the skill and prowess of the dead scout.

Wild Bill was six feet and one inch high, and generally weighed about 175 pounds. Not heavily built, he was still very powerful, of the lithe and sinewy order. A Kansan stood before the Apollo Belvidere and declared that Wild Bill might have served as a model for the ancient statue. On horseback he was, in the opinion of many, the handsomest and most graceful man ever seen west of the Mississippi, and he was hardly less so on foot. Straight as an arrow, easy, graceful, and nonchalant, he was an ideal specimen of physical manhood. His features were regular, his lips thin, his mouth sensitive. He wore a rather heavy mustache, and long, heavy, brown hair, which reached to his shoulders, and in which he evidently took considerable pride. His eye was frank, open, and of the kind sometimes called steel blue and sometimes steel gray. He dressed neatly, modestly, and after the fashion of the Western business man of that day, except for a broad-brimmed hat and fine calfskin boots. His voice was gracious and pleasing, not peremptory nor defiant. Indeed, he was rather serious and dignified in address, and a trifle cynical. There was nothing fierce in his appearance, and nothing to indicate to the casual observer the typical "bad man," unless possibly the slightly aquiline and rather pointed nose gave somewhat sinister notice of the presence of the bird of prey.

Hickok was the first frontiersman who recognized the importance of proficiency in the use of the six-shooter. This was the real secret of his supremacy. He was an unerring marksman, and shot as accurately under fire as when firing at a mark, apparently taking no aim. Probably no man ever equalled him in the lightning-like rapidity with which he could draw a weapon in time of emergency, and in the thorough self-possession that made it possible for him to take advantage of every opportunity in savage conflict. He had a standing order to his deputies that they should not rush in on him in any of his affrays, and especially should not come quickly up in his rear. By forgetting this Williams met his death, Hickok taking him for an enemy, and firing so rapidly that it left no opportunity for recognition. He readily killed the wild goose across the Smoky Hill with his revolver. Riding at his horse's highest speed he fired shot after shot into a tin can or hitching-post a few rods distant. Standing at one telegraph pole he would swing rapidly on his heel and fire a pistol ball into the next telegraph pole. These were some of the simpler feats he performed day after day on the street to settle little wagers. He could shoot a hole through a silver dime at fifty paces, and could drive the cork through the neck of a bottle and, at thirty paces, knock out the bottom without breaking the neck. He could do what the fancy shots of the present day do, and possibly some of them equal him as marksmen with a revolver, but it must be remembered that he was the first to acquire this skill, and that he shot just as well with others shooting at him, and at a man, as steadily as at any other target.

There were certain traits of his character strangely enough almost womanly. He was fond of children, and they liked him. A very small boy, whose fingers had been cut off in a machine, happening to pass his doctor's office, the physician examined the hand as Bill strolled up. He took an immediate interest, inquired as to the boy's identity, and expressed his regret that "so fine a little fellow" should be so crippled. With a pleasant word he picked up the baseball and bat of the other boy, threw off his coat, stepped out in the street, and amused himself for perhaps an hour knocking up flies for the lads to catch. With the peaceful settlers of the community, the businessmen, he declined to quarrel on any provocation. There was about him no foolhardy bravado. Ex-Mayor McCoy says: "Bill was neither quarrelsome nor cowardly, was strictly hon-

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est, never hunted a row, and never ran away from one." He always avoided conflict with the officers of the law.

A soldier who served with him during the Rebellion tells of a scouting expedition of fifty men of which Hickok was guide. Their work completed, the guide suggested that they return, that going farther would be dangerous. The imprudent and foolhardy officer insisted on a farther advance. They were attacked by 400 Indians, and most of the little band were slain, Hickok fighting bravely and escaping with the man who narrated this incident and some others. He knew himself to be a marked man, and accordingly was somewhat cautious and at times watchful, though when once engaged in a row absolutely fearless and desperate.

PHIL COE.

He has been variously criticised. Because he talked like a master to truculent and turbulent bad men, he has been called a bully by men who never show any spirit except when they scold their wives. Because he allowed no gang of man-killers to get the drop on him he has been denominated a coward by men who would not fight a cockle-burr. He was brave enough to fight a lion (he fought and killed a bear near Santa Fé), though too sensible to do so unless it was actually necessary.

Hickok's morals were much the same as those of Achilles, King David, Lancelot, and Chevalier Bayard, though his amours were hardly as frequent as David's or as inexcusable as Lancelot's. In a way he was a reincarnation of Lancelot, the renaissance of the knight-errant. He was conceded to be honest, and the fact that the law never attempted to call him to account, explains why it was generally agreed along the border that Wild Bill never killed anybody except those who needed it or were looking for it. From his earliest childhood to his last day he was especially fond of hunting and fishing. At Abilene he was often found angling in the waters of the little stream that runs through the village, and delighted in spending his idle hours beneath the shade of its cottonwoods. His English was good, his disposition pleasant, and his manners agreeable. I know a delightful old lady who settled on the border forty odd years ago, and whose husband often hunted with Wild Bill, whom she remembers as the most courteous and courtly gentleman that visited their cabin, not excepting the poet, traveller, and scholar, Bayard Taylor.

Homer sang the ruffian Achilles into thirty centuries of renown. The deeds of many frontiersmen excel the Greek's. David did his own singing, and came out with a great reputation. Yet I doubt not the McKandlas gang would have made Goliath look like an amateur. Ivanhoe, in his iron kettle with his long lance killing the neighbors for love of God and lady, never surpassed in courage and sacrifice Wild Bill and his comrades. But the dime novelist has been their biographer, and cheap notoriety their reward. They deserve a statelier history and a sweeter requiem. With all their faults they were brave and gallant gentlemen, who made it possible for quiet men to bring decent women and establish American homes on the plains and in the mountains. Wild Bill Hickok's adventurous career should have come to the knowledge of that fine old Scotchman, who delighted in the blare of bugles, the clash of arms, the tale of chivalry. Walter Scott would have made this great scout and peace officer a hero of romance and a prince of the border.

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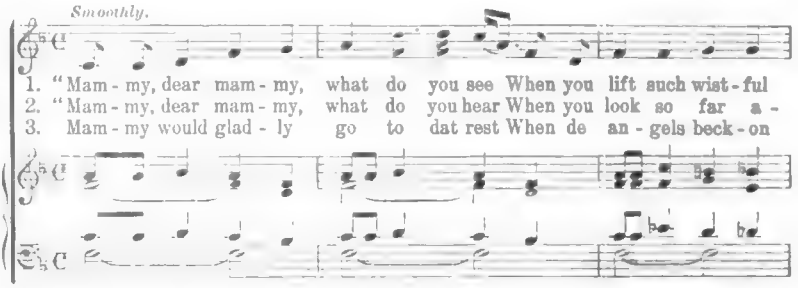
WHEN DE ANGELS CALL.

By Howard Weeden,

Author of "Songs of the Old South."

Music specially written for "Everybody's Magazine" by H. T. Burleigh.*


Smoothly.
1. "Mam - my, dear mam - my, what do you see When you lift such wist - ful
2. "Mam - my, dear mam - my, what do you hear When you look so far a -
3. Mam - my would glad - ly go to dat rest When de an - gels beck - on

*Mr. Burleigh, well known as a baritone at St. George's Church, New York, and as a composer, has long been working to show that the true negro music is really worthy of serious attention, and is by no means adequately represented by the cheap "coon songs" that have so much vogue.

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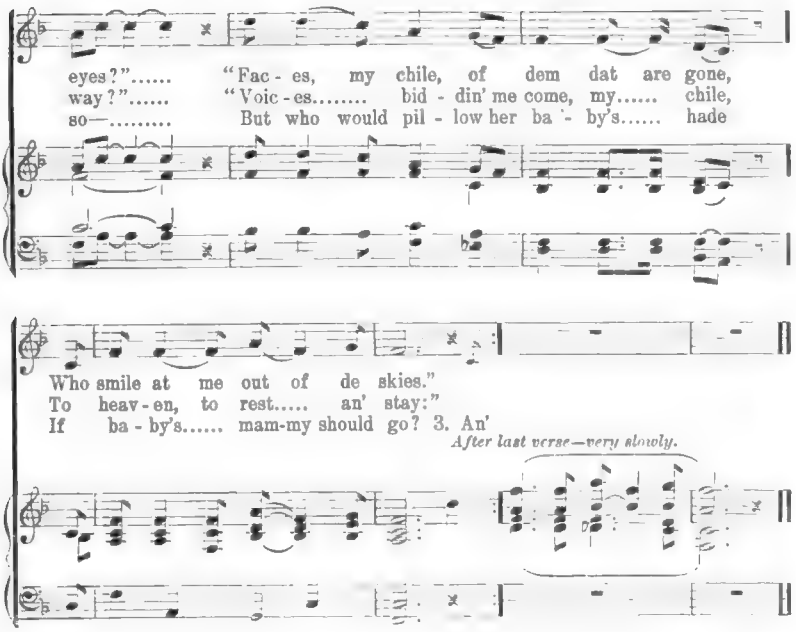
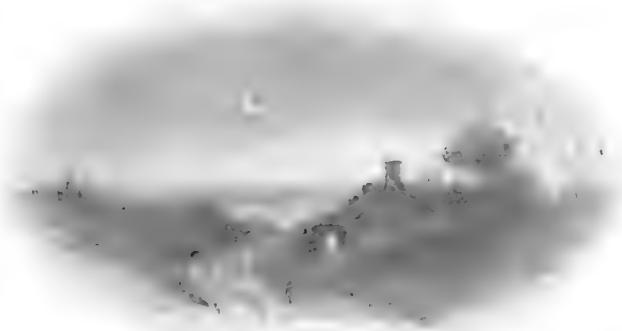

eyes?"..... "Fac - es, my chile, of dem dat are gone,
way?"..... "Voic - es..... bid - din' me come, my..... chile,
so—..... But who would pil - low her ba - by's..... hade
Who smile at me out of de skies."
To heav - en, to rest..... an' stay:"
If ba - by's..... mam-my should go? 3. An'
After last verse—very slowly.



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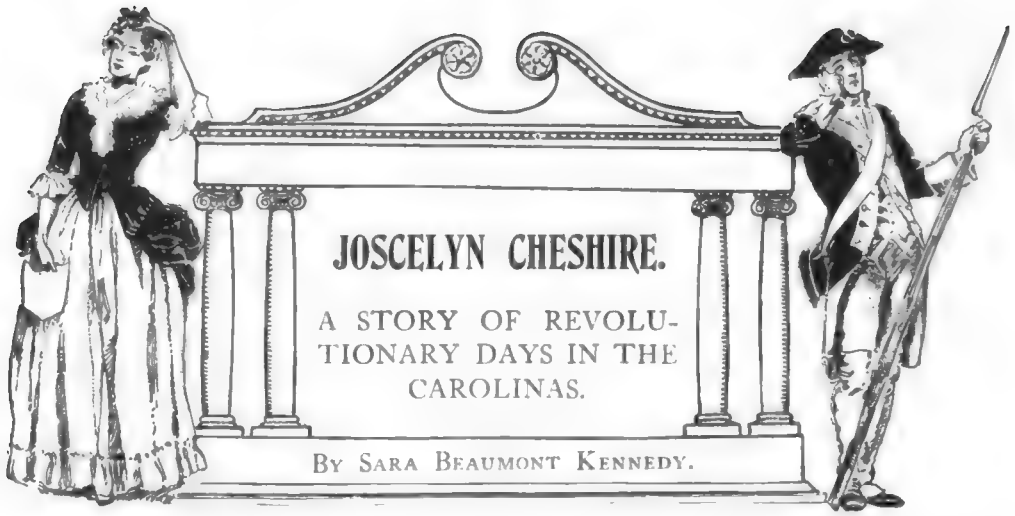

JOSCELYN CHESHIRE.

A STORY OF REVOLUTIONARY DAYS IN THE CAROLINAS.

By Sara Beaumont Kennedy.

SYNOPSIS OF PRECEDING CHAPTERS.

Richard Clevering is a young Continental soldier who has donned the "buff and blue" to the admiration of a group of relatives and friends—his mother, his sister Betty, and her friends, Patience Ruffin, Dorothy Graham, and Janet Cameron. But Joscelyn Cheshire is a Tory and contemptuously snubs Richard's efforts at love-making. Joscelyn's father had died just before the battle of Lexington, after which her mother moved to Hillsboro'town, to be near her brother-in-law, James Clevering, father of the young Continental who is now marching afield for the first time. Soon comes the news of James Clevering's death in a charge with Sumter; and Eustace Singleton, who, with his sister Mary, is a staunch Royalist, starts for the front, carrying with him a certain promise made by Betty Clevering.

By this time Richard had joined the American army at Valley Forge, while Howe was feasting and dancing nearby in Philadelphia. One day a man named Dunn proposes to Richard that they attempt to enter the city in disguise. They succeed so well that Richard, in the military rain-coat of one Barry, gains an interview with Mary Singleton's beautiful cousin Ellen, *fiancée* of Major Grant, one of Howe's *aides*. From Ellen Singleton he learns valuable information, which he and Dunn carry to Lafayette, who thereupon recrosses the Schuylkill, and joins Washington at Valley Forge. Clinton, who has superceded Howe in command of the army at Philadelphia, is now on the march towards New York, while the Americans hang on his flank. Then comes the fight at Monmouth. It is Richard's first and, for some time to come, last battle; for, through his impetuous daring, he has been captured by the enemy. Among the prisoners he recognizes little Billy Bryce, of his own town, and these two plan an escape, successful in Billy's case, while Richard is still forced on towards Sandy Hook, where, in the offing, lay the British fleet ready to convey Clinton's exhausted army to New York. From one Colborn, a kindly disposed guard, Richard learns that his own destination is the dreaded prison-ship in Wallabout Bay.

Before long Billy Bryce comes home to Hillsboro' with the story of the Monmouth victory, and his own capture and escape at the sacrifice of Richard's liberty; and Joscelyn receives, a few days later, a letter from Colborn with news of Richard's illness in the prison-ship. Whereupon she immediately sends letters through Betty Clevering to Eustace Singleton, Betty's *fiancé*, who is on Cornwallis's staff, begging him to use his influence in securing Richard's freedom. In the prison-ship the sufferings of Richard and his friend, Peter Ruffin, have become so intense that they form a second plot to escape.

Peter makes himself grave-digger to the prisoners, and soon succeeds in bearing Richard, like a corpse, to shore and burying him there among other victims of the pest-ship. No sooner has Peter, with the guards, retired to the ship, and Richard shaken himself free, than the latter comes face to face with one of the patrol. After a desperate struggle Richard strangles him and throws the body into the water. The next morning, after dodging about the island for some time, he comes unexpectedly upon the cottage of Dame Grant, who helps him to reach the Jersey shore.

To Hillsboro' Eustace Singleton had sent news of Richard's burial, but of his remarkable escape little was known there until Richard himself turned up one day at his mother's house. In a few days Richard, with his pockets full of letters, once more sets out to meet Dunn, and together these two travel on a mission to the South to warn the people there that Clinton, in transports, is now moving towards Charleston with the purpose of besieging that town. Gates, after his defeat at Camden, halts a few days at Hillsboro', while Joscelyn improves the opportunity by flirting with his officers.

Three years go by and the midwinter finds Greene, now in command of the American army, retreating to the South and eluding Cornwallis who, with Eustace and Captain Barry still on his staff, is forced to rest at Hillsboro'. Here, during a review of the troops, Joscelyn's horse takes fright and, pursued by Barry, runs out of the town limits, and is caught at last by Richard, who, however, escapes before Barry comes up. This sets the alarm and Richard, in despair, is soon driven to seek refuge in the Cheshire house, where, in the attic, Joscelyn (averting suspicion of her loyalty by many cruel taunts at the Clevering over the way) cleverly manages to hide him—while Barry, ignorant of her designs, waits for her down stairs.

Later, while the house is being searched by Tarleton for the spy, Joscelyn forces Richard from the attic to her own room, and then, when Mary Singleton arrives as a guest, back to the attic again, whence he at last escapes with news for General Greene. Soon after, Cornwallis wins his disastrous victory over Greene at Guildford Court House, and as a result of these American successes ending with the siege of Yorktown, Joscelyn at Hillsboro' is made an object of persecution. At Yorktown Barry, mortally wounded, is found and nursed by Richard, and these two have scarcely time to learn a mutual regard, through their love for Joscelyn, before Barry dies. Cornwallis surrenders, and now Joscelyn prepares to do likewise.

CHAPTER XXV.

GOOD-BY, SWEETHEART.

In the early morning, before the family were astir, Joscelyn dressed herself hurriedly and went to the attic door. It was ajar. With a quick premonition of evil she entered and whispered Richard's name. No answer came, no one was there. Then the

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truth flashed upon her—he had gone, risking everything rather than further expose her to discovery and its dire results. How chivalric, and yet how insane! Of course he would be captured, or else he would perish with cold and hunger this bitter winter weather. She looked about carefully; not a scrap of a note had he left to say good-by. She had not dared to wait to speak with him last night lest Mary discover them; but now she reproached herself, feeling that she might have prevented this mad mistake. She had meant to come back after all was quiet, but Mary talked so long that for very shame she had not dared to do so, dreading his man's judgment of a visit at such an hour.

She was now in a nervous tremor, and feared to have the maids come in lest they announce that the spy had been taken; and when they said naught of it she began to look for news from outsiders. Several times during the morning meal she glanced across to Aunt Clevering's house, with such a tempestuous pity for the old lady's coming sorrow that her eyes shone with tears; and her mother, seeing them, thought that it was sorrow for the estrangement she had wrought between the two families, and resolved to tell Ann Clevering about it.

"Come, Joscelyn," said Mary, looking up from her plate, "an you eat no breakfast and keep your mouth pulled down at the corners like that, we'll be thinking Captain Barry left unsaid the things he should have said last night."

"I know not what you think he should have said—but he was very charming," the girl said, rousing herself.

"Particularly when you two sat on the stair and whispered so long."

"The time seemed long to you because just at that time Edward Moore was talking with Pattie Newsom."

"Well," answered Mary, tossing her head, "it was quite as long to him, for he said it seemed years while he was from me."

"Poor Pattie!"

But all the time she jested her heart was full, and she kept her eyes on the opposite house or watched those who passed in the street to guess, if possible, if they carried news to the commander's quarters. The rain had passed in the night, but toward dawn the wind had crystallized it into sleet, so that in the sun the ice-dight world sparkled like a jewel catching the light upon its many facets, and kindling each with a different flame; everywhere was a brilliant silvery glisten with gleams of amethyst and agate, amber and opal—like momentary meteors in the marvellous dazzle. What a day to be hunted across country like a wild animal by human bloodhounds! What a day to die by a bullet; or, worse still, on yonder historic hill as the Regulators died!

The hours wore on and still no tidings came. It was close upon ten o'clock when the thud of hoofs resounded outside, and a minute after Barry entered the room. Evidently the news he brought was of a gloomy character, for his face was clouded.

"The spy—they have caught him!" Joscelyn cried, leaning heavily on her chair.

"The spy? What do you mean? What is the matter that you are so pale?" The solicitude in his voice was not unmixed with a curious surprise. Then, when she hesitated over her answer, he said, coming quite close to her: "Why are you so interested in this spy?"

Then in a moment she was herself again: "They say it was he who saved my life on the commons. Should I be true to my womanhood if I dismissed him from my thoughts? I tell you frankly, I wish him well."

She returned his gaze quietly, and he took her hand with a deference that was an apology. "And I, too, wish him well for that service, no matter what he may have carried to his general to our undoing—for he has not been taken. I am a soldier and a servant of the king, but in my heart of hearts your safety is more than the safety of Lord Cornwallis's whole command."

His reward was a dazzling smile, and an invitation to sit with her upon the sofa, which action brought him within a foot of her. He longed to lessen even that distance, but comforted himself with the thought that his hand might creep to hers at the first softening of her manner.

"What made you think I brought news of the spy?"

"You were so grave I thought naught but an execution could be in progress."

"It is indeed a kind of execution, for this is to be my good-by," he said sadly. "We march in two hours; already camp is broken, and preparations are being made."

"And this decision was reached——"

"Late last night at a council of officers. This spy has carried away information about

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"'MY HEART'S PRISONER FOR TIME AND ETERNITY.'"

Jocelyn Cheshire, page 608.

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our position that Greene could use to our defeat; that, with other reasons, brought about the decision. I did not sleep one moment for thinking of leaving you."

"And the search for the spy is given over?"

"Yes."

She could not repress a sigh of relief, but he did not so interpret it. Mary had withdrawn to the window, and her mother had left the room; they two might as well have been alone.

"My God, how I shall miss you!" cried the young fellow, at last, desperately.

"You are a soldier," she said gently.

"Yes, but no sword thrust ever hurt like this. You are glad you have met me?"

"Very glad."

"And you will miss me, and think of me sometimes?"

"Many times."

"And when the war is over, I may come back and—and claim your love?"

He had taken her hand, and she could not at once draw it away, for a strange hesitation was upon her. "I cannot promise," she said. "Ten days ago I did not know you."

"Yes, but ten hours taught my heart its lesson for life, and war makes quick wooing."

She slowly but firmly drew her hand away. "I cannot promise; but I love no one else."

"Then I will wait and hope."

A few minutes later a bugle sent its shrill call down the wind. He sprang up and hastily shook hands with Mary and Mistress Cheshire, who had just returned to the room; but, answering his pleading glance, Joscelyn followed him into the hall that the others might not witness the emotion of his parting with herself.

"Try to love me," he said, and was gone; and watching him as he passed out of sight, she felt that her hands were wet with the boyish tears that had fallen on them as he carried them to his lips in a fervid farewell. And suddenly she asked herself what happier fate awaited her than to accept this love, poured out so prodigally at her feet. The question brought serious thoughts, so Mary found her but dull company until other visitors arrived to say also their farewells. One of these brought a note from Lord Cornwallis.

"Mother," she said, coming down stairs in her habit, "I shall not be at home this afternoon. Call Betty over to sort her wools out of my knitting bag—she will find it on the spinet. And while she works over it, you go once more to Aunt Clevering's, if you please, and intercede for me; Betty will not mind being left."

Thus did she plan to leave the way open to Eustace for a hasty farewell to his sweetheart.

A little past noon the drums rolled out their hoarse commands, and the British army was on the move. An unrestrained excitement ran riot in the town. There were blaring bugles and flaunting flags, and everywhere glimmers of red as the corps passed onward. At the head of the British columns rode Lord Cornwallis, and at his bridle rein went Mistress Joscelyn, the picture of good humor and coquetry, with a scarlet cockade in her hat, and an officer's sash tied jauntily across her breast from shoulder to waist. The rich color of the silk brought out by contrast the sea-blue lights in her eyes and the glossy gleams of her dark hair. Men forgot the martial pageant to look at her, and when at the homepier of the river bridge the staff paused, the salutes from the passing soldiers were as much for her as for the general beside her. There the parting came, the officers falling in at the rear of the troops when the last company had passed over. As Eustace passed Joscelyn he lifted the lapel of his coat, on which was a purple aster—the like of which grew nowhere save in Betty's dormer window—and said with a happy smile:

"Your plan worked well, sweet Joscelyn. Ten minutes of heaven compensate a man for hours of purgatory. May the fates be as kind to your own heart."

But it was Barry who lingered behind the others for one last look and word, and then went clattering over the bridge, and left the girl to return to the town with the few Tory women who had dared to share her ride. They had been bold enough at the start, with all the king's army at their backs, but to go back unprotected by martial power was quite another thing; anti-Toryism would now hold sway, and they knew what that meant; so at the entrance of the town the others turned aside to find their homes, which fortunately were near at hand. But Joscelyn lived at the far end of the village, and must needs pass the whole length of King Street ere she gained her door.

The street, which for the past week had

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been almost deserted by the patriotic townspeople, now swarmed with eager men and women; but Joscelyn's thoughts were too full of Richard's escape and Barry's wooing for her to note the angry glances directed toward her. It was not until she was passing the wooden building that had served Cornwallis as headquarters for his staff that she became aware of the hostility she was exciting. Then a voice called out to her to take off that hated insignia she wore, and ere she realized what was happening four or five boys had surrounded her horse, and were snatching at the sash ends that dangled from her waist. Her anger flamed to white heat at this insult, and she laid about her with her riding whip until they let her be. A volley of light missiles followed her as she went on her way, her horse curbed to a walk, because she was too proud to seem to fly. The same pride kept her from dodging the paper balls and bits of soft mud that rained around her, and now and then struck her skirts and shoulders. Thus, looking neither to the right nor the left, she went slowly onward, until a little urchin, springing to the middle of the road in front of her, shouted insolently:

"Out upon you for a Tory jade!"

His companions screamed their encouragement, thinking to see her discomforted; but leaning out of her saddle, she said, with that smile that had played havoc with so many older hearts:

"Thank you, Jamie, for calling me such a beautiful name. Were the examples I helped you to work last week quite right? You must come again when you get in trouble over them, that I may save you from another flogging."

The boy, remembering her timely aid, drew back abashed, dropping the mud he had been wadding together in his grimy hand; and taking advantage of the momentary cessation of hostilities, Joscelyn waved them a laughing salute and cantered away to her own door. But in the privacy of her room she broke down and sobbed out the excitement and suspense of the past two days. The courage which had defied and cheated Tarleton and put the riotous urchins to shame melted away in that burst of tears, and a womanish longing for protection and safety surged through her. If she might only go away, or if there were but some one to stand between her and this weary persecution.

The first object upon which her eyes rested as she lifted her head when the weeping was past was that ill-fated scarf with which Barry had decorated her that morning at headquarters. What a world of meaning there was in it! Perhaps nothing could so have drawn her heart to the absent officer as this silent messenger of his love. She folded it away carefully, lingering a moment ere she shut it from sight to recall those last words he had whispered in her ear ere he followed his comrades over the river. All the rest of the day they echoed in her thoughts, calming her by their earnest tenderness.

"Betty came for her wools?" she asked her mother at bedtime.

"Yes. And I forgot to tell you that after I had gone from the house Eustace Singleton came to say good-by to you. When I returned from Ann's I found him in the parlor, where his presence must greatly have annoyed Betty, for she was red and flustered. I am sure I was sorry, but I was in no way to blame for her disturbance." And then tearfully she went on to tell how her mission with Aunt Clevering had again failed.

The change that came upon Hillsboro' with the going of the British was as swift as it was pronounced. Where before had been sullen repression among the people, all was now animation and exuberance of spirits; the Tories were intimidated, and the place bristled with patriotic evidences. It was as though a slide had been slipped in a stereopticon, and a new picture projected upon the canvas. All the talk now ran on Greene, who had moved down from the Dan, and lay upon the heights of Troublesome Creek, only thirteen miles from where Cornwallis had pitched his camp. For nearly two weeks the entire country watched with panting interest these two generals play their advance guards and reconnoitring parties against each other, as though they were but so many ivory figures upon a chess board. Then came the meeting at Guildford Court House, the fame of which blew through the land like a sirocco's breath.

"Lord Cornwallis has won the game at Guildford," cried Joscelyn.

"Aye, won it so hard and fast that he has had to run away to hold the stakes," retorted Mistress Strudwick, equally rejoiced over the British retreat to Wilmington.

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"Had the militia but done their share, we should have finished Cornwallis for good," Richard wrote to Joscelyn after the battle. "But praise be to Heaven, Bannistre Tarleton is among the wounded. I do hope and believe it was my bullet that hit him, for I singled him out for my aim, remembering his bearing to you and my mother last month. If so I hear that his wound proves fatal, I shall wear no mourning."

And, truth to say, Joscelyn herself sorrowed never a bit over the short colonel's discomfiture. Later on came another letter:

"We are on the march to the South to aid Marion, Sumter, and Pickens; to snatch South Carolina and Georgia from the foe. We know of the terrible doings of Arnold in Virginia, and General La Fayette has been sent to check him, but much I doubt his success. Ye gods! what a soldier we lost when Arnold went over to the enemy in that traitorous way. He was the one man in our army who was Tarleton's match in a raid. If the Marquis catches him, however, I should like to be at the reckoning. A traitor with the fire of genius in his veins! At Guildford I looked at his old command and said to myself that the day had gone differently had Arnold led them. Men followed him like sheep to victory or to death. Think you what a demon it takes to harrow one's country, to fight against one's own people!"

As the weeks passed and the spring advanced, Joscelyn's position in the community grew more irksome, for Tory supremacy was at an end, and the patriotic spirit was dominant. "Only the rudeness of some excited boys," the older folk had said of the incident of her homeward ride the day the British withdrew; but it was rather the true index of the public temper against her, and not a day went by but she was made to feel it keenly. Never was an occasion to annoy her neglected, until between her and her neighbors was a bloodless, but harassing feud that destroyed utterly the old harmony and good-will. She felt the change bitterly; every neglect or retort rankled in her thoughts until it became as a fester corrupting her happiness. But she kept a brave face to the world, and sang her Tory ballads on the veranda in the soft spring twilights, or as she worked through the sunny hours in the side yard where no flowers but those that blossomed red were permitted to blow. And Mistress Strudwick said to her cronies, with genuine admiration, that twenty Guildfords could not break the spirit of a girl like that.

But necessarily the thing that hurt Joscelyn most was Aunt Clevering's treatment. Not content to be a spectator, she often took the initiative in the persecution the girl was made to suffer, ignoring her in public, or noticing her only to taunt her with some uncivil word or look. A few sentences from Joscelyn might have swept away the barriers and restored the old friendship, but she would not buy her pardon thus. She possibly might not be believed without the proof of Richard's letter—that first short, fervid missive he had sent her on the eve of the great battle; and that she could not show, not even to his own mother, such a heroine did it make of her, such an ardent, grateful lover of him. Then, too, if this quarrel with Aunt Clevering should be healed, people would ask questions, and when the truth should be known she would be in no better plight—a Tory maid risking everything, even life itself, to hide a Continental spy! Neither friends nor foes would understand; her motives would be misinterpreted, her loyalty questioned; and so her last estate would be no better than her first. Thus did she hold her peace and hide her tears under cover of darkness, the while by day she sang her daring little ditties among the growing things of her garden.

Having been the arch Royalist of the town, it was but natural that public resentment should be most pronounced against her. The Singletons and Moores were less outspoken, and so drew upon themselves less of contumely. Her caustic speeches, on the contrary, were not forgotten, until Mistress Strudwick threatened, half-tearfully, half-playfully, to clip her tongue with her sharp scissors. But the chief thing that kept alive the animosity against her were the letters that came to her now and then from Cornwallis's camp. She did not deny their reception, but steadily refused to divulge their contents; and as it was believed that in one way or another she contrived to answer them, the idea got abroad that she was in the employ of the British general to keep him posted as to the state of things in Hillsboro'town. Nothing else could so have set the people against her as this supposed espionage, and all through the advancing summer she felt the weight of their displeasure. Mistress Bryce openly denounced her, boys shouted disrespectful things under her window at night, and the shopkeepers so neglected or refused her orders that, had it not been for Mistress Strudwick, she and her mother would have suffered; but that good friend stood staunchly by her. So loud were the outcries against her when she rode abroad that, out of def-

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erence to her mother's wishes, and also to save herself from needless mortification, she never had the saddle put upon her horse.

And yet innocent enough were those letters that caused so much of trouble, filled as they were, not with army news, but with a man's tender love throes, the vehement pleadings of a heart swayed by its first grand passion.

CHAPTER XXVI.

BY THE BELEAGUERED CITY.

"Peace; come away; the song of woe
Is after all an earthly song:
Peace; come away; we do him wrong
To sing so wildly: let us go."

—TENNYSON.

THE summer seemed interminable, lit all along though it was with the glimmer of lilies and iridescent gleams of parti-colored roses. It was the season of the year which Joscelyn loved best; but now the ceaseless sunshine, the mosaic marvels of the turf, the kaleidoscopic changes of earth and sky wearied her, so that she longed for the coming of autumn. It came at last, unfurling its red and yellow banners in the woodlands, and setting its russet seal upon the meadows. And with it came the news of the siege of Yorktown; and the town of Hillsboro' waked to new enthusiasm and thrilled or shuddered at every alternating rumor.

And in each of those far-away armies on the York was a man who watched the sun go westward every eve, and sent a silent message to a girl with dark hair and sea-blue eyes, who pruned her roses in a new garden of the Hesperides beside the Eno. Unknown to each other, their thoughts had yet a common Mecca. But fate was not content that they should stand thus forever apart.

In Yorktown Cornwallis had thought to be safe either to escape to Clinton, or to be rescued by that general's fleet sailing down the Atlantic from New York. But now to the east, in Lynn Haven Bay, De Grasse's ships held the passes to the sea; while on the land side—one wing on York and one on Wormley Creek—in two great crescents stretched the lines of the allied armies, with Warwick Creek running darkly between. Over the tents that gleamed in the autumn sunshine there flew, side by side, the stars and stripes of the Republic and the *fleur-de-lis* of France. And there were sallies and repulses, and daily encroachments and skirmishes between the allies without and the British within.

It so happened one day that Richard's company was detailed to guard the ditchers who were making a new trench and throwing up a fresh line of breastworks, that would enable them to draw yet nearer to the redcoated pickets. Already these latter had been forced—by the horns of that ever-encroaching crescent—to withdraw twice, and now a third retreat seemed imminent. But not without a struggle would they yield their posts; and so presently, on that mellow autumn day, a flash of scarlet came in the sun as an assaulting column swept out toward the projected line where the shovels were at work; and the Continental guard, after discharging their guns with signal success, waited with fixed bayonets to receive the advancing column. It was a fierce contest, fought almost hand to hand; then the redcoats began to fall back, and with a quick rush the Continentals turned their retreat to a rout.

Returning from that fierce charge with the flush of the fight upon him, Richard came upon a man lying prone upon his face in the stubble—the gallant English captain who had led the sally. He had seen him as he fell far in advance of his column. There the retreat had left him inside the new lines of the Continentals, and finding him still alive, Richard turned him over softly so as not to start his wound afresh; and as he did so he caught one word from the pale lips:

"*Joscelyn.*"

That name unlocked the floodgates of the young Continental's sympathies.

"Dunn," he said to the man in front of him, "give me a hand that I may get this poor fellow to my tent."

"The surgeon will find him here directly and have him moved to the field hospital."

"He could not stand so long a trip. See how near he is already gone with this bullet-hole in his side. Come, I have a fancy not to see him die here in the wet grass."

So Dunn lent his aid, and the wounded man was put down in Richard's tent, murmuring again that talismanic name.

"He may possibly live till morning," the surgeon said, when at last he came from attending to his own men, "but he cannot

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be moved. I will try and send you some one to look after him."

Richard touched his cap. "If you please, I am off duty to-night; I will willingly nurse him, if so you give me directions."

And the man was left in his care; and during the slow hours, word by word, and sentence by sentence, he patched together the fevered ramblings of his patient, until he knew that the Joscelyn of his own hopes and fears and dreams was identical with the girl of this other man's thoughts.

Something seemed to catch at his throat, to tighten about his heart; and he went out and stood awhile at the tent door, gazing up into the clear heavens, whose steadfast stars were shining also on the distant Carolina hills, watching a window behind which a girl lay sleeping—dreaming perhaps of the man yonder on the pallet. Had he lost her through this other one? Was his life to miss its one strong purpose in missing her?

By and by, when he was calmer, he came again to the pallet where the dying man lay, and picked up the sword which, along with his own, was propped against the canvas wall of the tent. It was of beautiful workmanship, with a crest on the jewelled scabbard, and below a graven name, which, by the light of the tallow dip, Richard at last spelled out, "Barry."

He stood thinking for a moment. Why, this, then, was the man for whom Ellen Singleton had mistaken him that night he played the squire to her in a borrowed military cloak at the *fête* in Philadelphia. What strange fate had brought them thus together? "The finest officer who wears the red, and a lady-killer," Dunn had said. And that tightness gathered again at Richard's heart, for where else had he heard of the man?

Stay, was not Barry the name? Yes, it was the very name he had heard coupled with Joscelyn's that night while he lay hiding in the freezing attic. "She is sitting on the stair with Captain Barry." The very tones of the speaker came back to him, bringing again that thirsty desire to open the door and look for her, which he had not been able to resist, though life itself might pay the forfeit.

He went back to the pallet and bent down that he might see the face of his patient. So this was the man who had won her away from the rest of her company, the man to whom she had bent down so low, that from the rear only the dark crown of her hair could be seen as she sat on her steps—this was the man to whose love-tale she had listened smilingly, while he himself was a prisoner hiding for his very life! A lady-killer, Dunn had said; and well he could believe it from the traces of manly beauty still lingering in the suffering face. A fierce jealousy tore at his heart. Evidently, from his ramblings, Joscelyn had listened to this other's wooing and had written him letters; while she mocked him and sent him never so much as one little line in answer to all the pages he wrote her. He had always known that other men would love her—it could not be otherwise with her sweetness and her beauty—but always in his thoughts she had kept herself for him. Had it been a false hope; had she loved this brave Briton who called upon her with such pathos of tenderness? If so, then was his own dream-castle in ruins.

By and by, just before the end, there came a lucid hour. The wounded man turned his eyes questioningly upon his nurse.

"I found you after the fight, so far in our lines, that your men had missed you in their retreat, and the surgeon left you in my care," Richard said gently.

"To die? Yes, I see it in your eyes."

"You fell at the head of your men, as a soldier wishes death to find him."

The other smiled faintly. "My mother will perchance be a little comforted by that. You will write her?"

"Yes. And Joscelyn?"

"Joscelyn? How do you happen——"

"You talked of her in your delirium. She lives in the Carolina hill country. I, too, know her, and—love her."

And then each told something of his story to the other, and they clasped hands as brave men can, when enmity and prejudice and jealousy are swallowed up in the wide sympathy that lurks forever in the precincts of the Great Shadow.

"And when the war is over and I tell her again of my love," said Richard, with that impulsive generosity that was ever one of his characteristics, "I will tell her also of yours—and mayhap she will choose rather to cherish your memory than to give herself to me."

And Barry turned his face to the wall and died, whispering his love for her to the last. It was a strange scene, this midnight confessional between two men who, all unknown

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to each other, had striven for the same heart-goal; who in life would have been bitter and unrelenting rivals, but who met and parted amid the shadows of death as friends and brothers. Richard wrote it all to Joscelyn, eloquently, passionately; portraying faithfully every emotion of the dying man.

"He loved you, Joscelyn, even as I do; only not so much, for methinks no man could do that. But he was brave and manly, and to have won his heart is proof of your sweetness and worth. He told me many things of that fearful night when I lay up in your garret, and down stairs you held your guests from all suspicion by your tact and courage. He hated Tarleton for his distrust of you, and I let him go to the Far Shore in ignorance of how you saved me, fearing that he would not understand, and that his last moments would be embittered by a useless jealousy.

Did you love him? Am I breaking your heart with this news, my best beloved? If so, remember, I beseech you, how my own would break to know it."

And Joscelyn read the letter by the fading sunset, and then sat with wet eyes through the star-haunted gloaming, thinking of the young life that had gone out in the red trail of war. She missed him as it did not seem possible she could have missed any one who had been so short a while in her consciousness.

And sitting thus alone with her sorrow, she felt a hand on hers, and an arm slip around her neck.

"Joscelyn, I could not stay away any longer," whispered Betty's voice in the dark. "I had both of your notes; I know you are sorry, and I miss you so much!"

"Dear Betty, dear Betty, how glad I am you are come! I cannot tell you how lonely and wretched my life is, and now my—my true friend is gone!" And with her head on the girl's bosom she gave way to a nervous sobbing.

"Did you love him?" Betty asked, when at last she understood.

"I—I do not know; but I have so few friends, and he loved me and trusted me, and I shall miss him."

"Did you wish to marry him?"

"I cannot say. Sometimes when I have been very lonely, and you all turned from me, I have thought I did. To marry him and go away to a new place and new friends seemed best. He was strong and brave, but he was gentle and considerate, and he never hectored me—a girl likes not to be hectored and quarrelled with in her courting."

"No," answered Betty sadly, understanding she had Richard in mind. Often, with a woman's instinct, she had pleaded with her brother to humor Joscelyn more in her way of looking at things; but he had chosen to attempt to set her right, or at least right as he saw it.

"I must be going; mother is at Mistress Strudwick's, and will be angry if she knows I came here," Betty said at last, rising with a sigh.

They held each other close for a moment, and then Betty ran across the street and dodged into the shadow of her own door. Her visit helped Joscelyn immeasurably, in that it gave her a sense of sympathy. But she could not shake off the depression of Richard's news; it was a culmination of the long strain upon her nervous system. In the succeeding days she had fits of silent brooding, which sometimes, in the sombre twilight, ended in tears. For the first time since the news of Lexington her neighbors found her grave and preoccupied. The fearless badinage with which she had met every attack upon her partisan creed was suddenly stayed, as though she heard not their thrusts and innuendoes. And Mistress Strudwick watched her with a vague uneasiness, longing to see the old, quick passion flame up now and then.

But this frame of mind was rudely broken by the thrilling news of the fall of Yorktown. She had expected it for days, but the reality roused all of her former spirit, and put her once more upon the defensive.

"Lord Cornwallis has surrendered?" she said calmly to Amanda Bryce and the two gossips, who had run in to tell her the news and gloat over her discomfiture. "'Tis most courteous of you to bring me the information so swiftly; you are quite out of breath with your race. I shall immediately write my sincere condolences to his lordship that wrong has triumphed over right. Will you not have a cup of tea with me, ladies—there is no longer any tax! No? Then I have the honor to wish you a very good-morning. Pray come again when you have further tidings."

She set the door open for them with the air of a sovereign condescending to her subjects; and they went away humiliated and furious.

"From the airs she gives herself one would think Joscelyn Cheshire had royal blood in her veins," they said angrily. But

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when Mistress Strudwick heard of the scene, she laughed long and heartily.

"They deserved it, the carping crones! Would I had been there to see them routed. Thank Heaven her spirit has come back; how I love her for it, unreconstructed Tory as she is!"

Never again was Joscelyn to deck herself in her scarlet bodice in honor of an English victory; never again to tease her neighbors with her taunting Tory ballads. The war was over; she had lost her cause, and with her life all out of attune with her surroundings, she must face the inevitable. Seeing the relief in her mother's face, she could not be sorry that peace had come, though the terms were bitter; and so even in her loss was there something of compensation.

CHAPTER XXVII.

HOME-COMINGS.

"The bugles sound the swift recall;
Cling, clang! backward all!
Home, and good night!"
—E. C. STEDMAN.

THE war was over; the drums lay unbeaten, the snarling trumpets sang their songs no more upon the level plains or sloping sides of far blue hills; liberty had triumphed, and the scarlet insignia of kingly rule had gone from the land forever. But peace did not immediately bring the desired order of things. The unstable government of an untrained Congress could not control the spirit of maraud and chaos that had so long dominated certain classes of the people. Eight years of warfare had left its scar on the whole country, but particularly in those portions where the fighting had fallen. The sanguine among the triumphant contestants had looked for an immediate rehabilitation of affairs, thinking that the taps of war would be the reveille of commerce and order and prosperity. But as yet Americans were better soldiers than statesmen. They had to learn to govern themselves, to wield the mighty power they had won, and, at first, knowledge was slow in coming. Private wrongs were remembered, individual grievances were recalled. The spirit that refrained from shouting over a fallen foe at Yorktown manifested itself at home in many petty ways against the defeated Tories, so that among these latter was a feeling of unprotected helplessness that made them sullen and restive.

"Joscelyn," Mary Singleton said, coming in one day when the winter was at its fiercest, "father says he is going away to Canada to stay until things get settled. We cannot stir from our gate without receiving some rudeness, and our property is being confiscated piece by piece, on the ground that we used it to aid the king's cause. Will you come with us? We would love to have you."

"No, for my mother would not think of such a thing, and where she is there will I stay."

"Well, you had no man in the war; but against us the enmity is strong because Eustace actually bore arms in the king's service."

"Will Eustace go with you?"

"No; he writes that as soon as he gets his discharge he means to return here and accept whatever fate comes to him."

"I am glad. That is the right way to take his defeat. Your father is old and worn with annoyance, but Eustace is young enough to meet the struggle and win his way. Trust me, all will be well with him in the end," and Joscelyn's eyes were on Betty's window over the way.

"Edward Moore joins us in New York," Mary said, with a blush.

"And I shall not be there to play the part of bride-maid! Well, I shall content myself with putting a handful of rice and an old shoe into your trunk."

After the Singletons were gone, Joscelyn was very lonely, for the only house at which a welcome always met her was Mistress Strudwick's.

"You may say what you please, Amanda Bryce, but that girl comes here when she likes, and stays as long as she pleases; and if there is anybody I'm gladder to see, I do not know who it is," said the staunch old lady.

Soundly she lectured Joscelyn at times, but the fault-finding always began and ended with a caress, so there was no sting in it. Here the girl sometimes met Betty, and the older woman, seeing the desire of their hearts shining in their faces, encouraged them to be friends. Here, too, Janet Cameron often came, and after the visit walked home openly with her arm in Joscelyn's, making merry little mouths at Mistress Bryce as they passed her door. These visits and

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walks were Joscelyn's chief pleasure, and she stood sorely in need of recreation, for of late she was thinner and more irritable than her mother had ever seen her.

"You need a course of bitters," Mistress Strudwick said, opening her medicine box one day.

"I have been taking such a course for eight years."

"Yes, Amanda Bryce's tongue drips not with honey! But I shall talk with your mother, and between us we will take you in hand and get the edge off your nerves." So Joscelyn dutifully yielded herself to her two physicians, who took much delight in the teas and tonics they brewed for her.

During all these autumn and winter weeks Richard Clevering had lain in the field hospital at Yorktown, racked with pain and fever from the wound he got when, singing a song of the Carolina hills, his regiment stormed that gun-girt bastion on the British left, and the colonies were free.

Things would have gone better with him had he been content to lie still and let the bones knit; but he could not stay away from that last scene of the surrender, which made all the privations of the past worth while. To miss that was to miss the joy of life, the glory of the fight, and so he had pretended to be much stronger than he was, and had gone to stand in his place when the British, with silent drums and cased banners, marched from their surrendered fortifications and stacked arms between the martial lines of French and Continentals. The sight compensated him for the pain the exertion entailed, so that he never complained when, afterwards, the surgeon shook his head gravely over the fever that flushed his veins. He had had his heart's desire; he would bear its results.

But in the early part of January, seeing a tedious recovery still ahead of him, and the hospital facilities being so limited, he asked to be sent home to be cared for by his own people. There would be no more fighting, and his stay was an unnecessary burden upon the army officials, whose hands were full trying to keep down the spirit of insurrection that was fermenting the camp over the delay in the soldiers' pay. To relieve the strain upon the moneyless army coffers, many of the men who had been invalided were allowed to return to their homes. Thus it was that Joscelyn, unconscious of the extent of the hurt that had come to him—for he had written no particulars home—and also of his dismissal, answered a knock at her door one bleak January day, and gave a great cry at sight of the weary man leaning against the veranda railing, with an empty sleeve pinned helplessly to the bandaged arm beneath.

"Richard Clevering!"

"Aye, Richard come back with a crushed arm, but a sound heart to claim you, unworthy though he now knows himself to be of such a prize. Joscelyn, Cornwallis has struck his martial colors; will you surrender to me for love's dear sake?"

He had come into the hall and closed the swaying door against the wind, while she retreated backwards until she stood close to the wall, her hands behind her.

"I owe you life and all the gratitude that means, but it is out of my love for you, which has grown with every hour of my absence, that I ask this—will you come to me, Joscelyn?"

She did not speak, but slowly she shook her head, her eyes meeting his with a curious compassion. For one long minute he looked at her, searchingly, yearningly; then his outstretched arm fell to his side.

"Then is the war not over for me," he said sadly.

He went with her into the sitting-room, and, with the luxurious hearth-glow brightening his face and taking that deathly pallor out of it, the while her magnetic presence kindled a tempestuous fire in his veins, he told her the story of that final surrender and of his hurt, softening the former narrative as best he might, remembering how she had wished it otherwise. Then, with a half-whimsical, half-pathetic touch upon his bandaged arm, he said:

"The surgeon said that with time and care this would heal, but the accident has left me but one hand wherewith to begin that other campaign which means so much to me—for if I win you not, I might as well have perished at the hands of the redcoats."

As she listened, while the afternoon wore away, she was conscious of some change in him. Not that his tone showed less of resolution to achieve his purpose; it was rather an absence of the overweening self-confidence which had so offended her in the past. Five years of warfare and baffled wooing had taught him something of self-distrust, something of humility, which became him well. The empty sleeve and the emaci-

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ated, listless figure touched her with a quick pity, in such violent contrast were they to his former robust activity and superb proportions, so that she sighed and turned her face aside.

And he on his part was studying her, finding again, with a thrill of joy, the same saucy curves about her lips, the same glinting blue light in her eyes that had held his heart captive in the past; and noting, too, the touch of womanly dignity which had in some wise supplanted the impetuosity of the old days. The girl of eighteen had become a woman of twenty-three since that day she had laughed down upon the Continentals marching away to Valley Forge. But there was not an attraction lost; rather was every charm ripened and perfected by the hallowing touches of growth and development. If he had loved her in the past, a thousand times more did he love her now in her splendid womanhood. Had she cared for Barry? Always the question was a stab; and with it now there came the first quick doubt of the final healing of his arm. Could she ever love him if he should be maimed like this forever?

Looking up suddenly, she found his eyes upon her face in such a wistful gaze that she flushed involuntarily, and a painful silence fell between them. Intuitively she felt that this was not the same Richard who had gone away, this earnest, tender man, with not a trace of arrogance in his manner. Had he always been like this they need not have quarrelled. She had been willing to overlook much had he only left her a right to her opinions, and treated the views her father had taught her with respect.

"Do you know," she said, breaking the pause with a little nervous laugh, "that if you are to preserve the good-will of your neighbors, you must stay away from me?"

"Then do I this minute forswear their friendship, for to stay from you would be to remain outside of Paradise. Only tell me one thing—you did not hate me for the news I wrote you of Barry?"

"Nay, it was the one of your letters I felt drawn to answer."

He took her unresisting hand and kissed it softly. "If you loved him, I would I had died in his place."

And then again that silence fell between them, while at his heart was biting that most helpless of all jealousy, the jealousy of the dead. Against a living rival one may contend with hope; but when that on which the heart is set has come to be but a memory, incapable of blunder or cruelty, the contest becomes useless, or pitifully unequal. Yearningly Richard's eyes studied the face before him, and yet he would not ask her the question that burned in his heart. Some day she would tell him the truth of her own accord; until then he must wait and suffer.

His return, she foresaw, was to be to her at once a relief and an embarrassment, for she would not consent to his making public her share in his escape of the past winter, lest it look like a plea on her part for a cessation of hostilities.

"I have held my own against them all these years; I will not ask for any terms now that the end has come and my side has gone down in defeat," she said.

"But, Joscelyn, think how they would adore you for such a service to their country! My information was most useful to General Greene."

"I did it not for sake of their country."

"Well, then, for sake of their countryman. They love me, if you do not." He leaned toward her laughing, yet pleading; and she noted how honest and pleasant were his eyes. But she held to her point against all of his arguments; and so he was feign to yield, except in regard to his mother; there he was firm.

"I never dreamed but that she knew, for the quick movements of the last campaign left no time for letters to reach me from home. Had I not thought you would tell her as soon as the British were well out of town, I should have asked a furlough and come home to set you right. To think what you have suffered for saving my poor life."

And so it was that half an hour later Mistress Clevering came hastily in without the ceremony of knocking, and taking Joscelyn in her arms—to Mistress Cheshire's amazement—said many grateful and affectionate things.

"When I think of what you have done for us I am bowed down with humiliation for the cruelty with which I have requited you. Oh, my dear, my dear! had you only told me and your mother at the time things would have been very different."

"Yes," answered the girl demurely, "so

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different that Master Clevering's life would have paid the penalty of his daring. Nay, it was a game at which only one could play with safety. You could have done naught but share my anxiety, and that were no help."

"And to think how I have scolded and blamed you for the quarrel between me and Ann," said her mother tearfully; but Joscelyn's tender answer comforted her.

"And here comes Betty to make her peace with you, too," Aunt Clevering said, as the breathless girl entered.

"Oh, Betty and I have been friends these many weeks, as dear Mistress Strudwick can testify," Joscelyn said, putting her arm affectionately around Betty, who with a grateful cry had sprung to her side. And from the doorway Richard thought he had never seen a more beautiful picture.

Thus was the breach that had yawned between the two families healed; and the sorest ache in Joscelyn's heart was cured as she witnessed the happiness of her mother, who, with a firmness scarcely to be expected, had given up her old friend and held staunchly to her daughter, although she held that daughter to blame. It was touching to see her childish delight in the renewal of the old relations. A dozen times a day she was in and out of the two houses, for Richard's wound afforded her many pretexts for kindly ministrations. He never left his bed except to lie on the sofa by the window, for his strength seemed suddenly to have failed him after the sustained effort he had made to reach home. Often he wished Joscelyn would come in her mother's stead; but for her own reasons the girl kept her distance, so that sometimes he did not see her for days together. And every day that she stayed away the jealous pain bit deeper into his heart.

But one day she came of her own accord. There had been a knock and the sound of a man's voice at the door, followed by the maid making some excuse for Mistress Clevering; and presently, when all had grown silent, Betty came through the sitting-room with a face so white that Richard called out from where he lay to know what was the matter. But she did not stop to answer, and so he waited in a troubled doubt while the clock ticked off a slow fifteen minutes. Then the door opened, and Joscelyn came straight up to his couch, a strange light of pleading in her eyes.

"Richard," she said, and his face brightened, for she had taken to calling him Master Clevering with a formality he hated—"Richard, if a man be true and honest, and loves a woman, should he not have the chance to tell her so and win her?"

"Most assuredly."

"And old feuds and differences of a former generation, with which he had nothing to do, should have no weight to hold him back?"

"Why—what mean you?"

"This; that even as you love me"—and a brilliant color dyed her cheeks at the mention of it—"so does Eustace Singleton love Betty."

"I had half guessed as much—and I am sorry."

"And Betty loves him. Nay, lie still, and look not so angrily at me. There is no one to blame; a woman's heart, like a man's, asks no permission in the giving of itself."

"But Betty knew——"

"Yes, she knew all the opposition in store for her, and she made her own fight; but love takes no dictation."

"Right well do I know that."

"Then you have no room for a quarrel with her; rather should your sympathy be on her side. All her happiness is set on Eustace; he is her true lover—has been for years—and I have resolved that you and Aunt Clevering shall not break her heart by a cruel and useless separation." She stepped back and threw up her head; just so had she looked a year ago when she bade defiance to the short colonel while Richard crouched in her shadowy garret. For a moment they gazed at each other steadily, then she was again beside him, her eyes luminous with a gentle entreaty.

"Richard, if—if I loved you with all my soul, would you let my mother's dislike stand between us?"

"My God, no!"

"Eustace is a man like you—and Betty loves him like that."

He saw the drift of her meaning, but he did not answer, and thus for a minute they looked into each other's eyes unwaveringly; then his gaze fell, and with a sudden delicious softening of manner she stooped and took his hand.

"Richard, Eustace is yonder in my parlor, come back like a brave man to begin life all over, and suffer anything to be near

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Betty. He has been denied entrance at your door. Bid me bring him here to you. If not—then will I take Betty to him, even though I should thus lose your and Aunt Clevering's friendship forever."

"You make hard terms."

"I am dealing with a hard man."

"Think you so, sweetheart? Methought I had ever been gentle to you. Betty's happiness is very dear to me—" he broke off, sighing. She still held his hand, or rather he held hers, for his was the stronger grasp. Suddenly, with that same enchanting gentleness she bent close to him, and laid her cheek against his tingling fingers.

"Thank you, Richard, for yielding. I knew you could not be so cruel as to refuse. I will bring Eustace at once."

"But, Joscelyn, I did not say——"

"Oh, but you looked your consent—and I never saw your eyes so beautiful, such a tender gray." He flushed with pleasure, still, however, protesting; but she was already at the door, whence she looked back at him with a roguish smile. "I shall give you half an hour to make Aunt Clevering see things as we do. At the end of that time I will be here with Eustace, and if you wish to go on being friends with me, be sure to have on your very best manners, and—and that beautiful light in your eyes."

She kept her word, and an hour later Mistress Clevering, stiff of lip, but courteous of manner, bade Betty take Master Singleton to the parlor and find him some refreshment. And when Betty had obeyed, Joscelyn softly closed the door behind them, shutting them into a rose-hued world of their own, where it were sacrilege for another to intrude. Upstairs she heard Richard calling her entreatingly, but remembering by what means her victory over his prejudice had been won, she ran swiftly into the street and reached Mistress Strudwick's door, with such a glowing face that that lady exclaimed:

"Hoity, toity, child! still letting your cheeks play the Royalist although the war is done? Your sweetheart should see you now. In sooth, I think Amanda Bryce would even agree that you are pretty. Come here and tell an old woman what all these blushes mean."

And Joscelyn's fibbing tongue said it was only the race she had run in the wind from her door.

CHAPTER XXVIII.

AN UNANSWERED QUESTION.

"As o'er the grass, beneath the larches there,
We gayly stepped, the high noon over head,
Then Love was born—was born so strong and fair."
—*Gipsy Song.*

ALTHOUGH Joscelyn continued to hold herself aloof from Richard, yet she was conscious of his protecting influence in other ways beside the healing of that family quarrel that had been such a burden to her and to them all. Most of the women of her set continued to cut her outright, or to treat her with the scantest courtesy; but there were no more threats concerning her, the boys who had hooted under her window left off their insolent ways, and the merchants and tradespeople no longer gave her indifferent service. And in all this she recognized Richard's work, for he had openly espoused her cause, and had let it be known that those who offended or ill-used her should later on be answerable to him. From the day of his coming she felt herself shadowed by an unobtrusive but persistent watchfulness that plucked many a thorn from her path; and after the stormy months that had passed she could not but be grateful for the calm. Invalid though he was, she intuitively felt his to be the stronger will, and made no fight against what he did in her behalf. The protection for which she had longed had come to her, and she was glad to feel his strength between her and her persecutors. Never in any boastful way did he remind her of the defeat of her cause; and tacitly she acknowledged his generosity. The very perils they had shared drew them together with that subtle bond of sympathy a mutual interest creates; and so seldom was there a return to their former sparring that Mistress Strudwick protested she knew not which had the better manners.

"I declare, my dear," she said, pinching Joscelyn's cheek, "you are so beautifully behaved of late that I begin to find you a bit tiresome. Methinks I must stir up Amanda Bryce to pay you a visit and talk over the war, or else we'll all be stagnating for lack of excitement."

"Well, stagnation is just now the special estate to which I aspire."

"So? Well, Richard here prefers the estate of matrimony. Is it not true, my

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lad?" And from the sofa Richard's eyes said "yes"; whereupon the old lady went on, nodding her head with mock solemnity: "And since one of you wants stagnation and one wants matrimony, I am not so sure but that you are of the same mind, for some folk find these things of a piece. And so, Miss, you may have come around to Richard's way of thinking, after all." And seeing Joscelyn stiffen, Richard was sorry that the conversation had taken such a personal turn; for the two had come in to pay him a visit. That was one thing that troubled him—she never came by herself; always it was her mother or Betty or Janet Cameron she brought with her, as though she feared to trust herself alone with him. And even with these others she came so seldom. He could not go to her, for the hard, rough journey home had racked his arm, and set the fever to throbbing again in his blood, and he must remain quiet, or dire consequences were threatened.

But one February night, when she had stayed away several days, and the longing in his breast grew unbearable, he sent for her. The wind without howled like some hungry creature seeking its prey, and the white-fingered spirit of the snowstorm tapped at his window. But he gave it no heed; he must see her this night of all others. She came at once, a brilliant apparition in a scarlet shawl over which the snow lay powdered in shining crystals, on her lips and in her eyes the smile of which he had dreamed in the copper and crimson sunsets on the prison-ship. He gathered her cold hands into his feverish ones.

"You knew I must see you this night?"

"Yes; I felt you would send for me."

"A year ago to-night you and I stood in jeopardy of our lives."

She nodded; all day she had been living over those fearful hours of which this day was the anniversary.

"We have never talked of that dreadful time; now I want you to tell me everything you can recall of it. Sit down."

As she obeyed the wide shawl fell away and left in sight the silver brocade of her gown, and her shoulders rising white and beautiful from the lace of the low bodice. He started, and raised himself upon his elbow. Was he dreaming? No; the powder and the rose were in her hair, the saucy patch at the corner of her mouth. She had not forgotten; just so had she looked when she faced Tarleton and risked her womanhood for his own safety. He could not speak, but his eyes did full homage to her beauty.

"I knew you would send for me, so I was ready," she said, and smiled again. So it was for him she had robed herself thus? There was a thrill of ecstasy in his veins. And then, when he still did not speak, for sheer joy of looking at her, she began to talk of that terrible day; and both of them lived over in a quick rush of memory all its hopes and fears. Her fingers were icy cold, and the very tremors that had then possessed her crept again through her veins as she went from scene to scene, and he learned for the first time all of her deceptions and trials. So absorbed was she that she did not even know that he had taken her hands in his, until she felt the hot pressure at the end of her narrative. Then, when there seemed nothing left to tell, and he still looked at her in a silence more eloquent than words, she grew restless and rose to go; but he caught her skirt.

"Not yet, not yet! Betty is happy with her lover in the parlor, and mother is somewhere down there acting propriety, or else fast asleep. For this one evening, at least, you shall belong to me."

And then, when those trembling fingers had drawn her again to her seat, he went on:

"There is one question I have wanted to ask you all these months—" And then, for very fear of her answer, he hesitated and substituted another. "Why did you not come back to me that last night? You knew I was waiting for you."

"It was so late."

"So late? What mattered an hour on the dial when I wanted you so much?"

And she flushed and hesitated, remembering she had not gone back at that unseemly hour lest he should misunderstand her. Looking at him now, she was ashamed of that doubt of him.

"Was it in truth the lateness of the hour, or—or because of what Barry said to you on the stair? I opened the attic door and saw you, and I knew he was talking of his love. Was it for that you stayed away from me?"

She turned her head aside with a gesture that hurt him like a knife-thrust. Then the question that had burned in his thoughts and filled his heart with jealousy all these weeks came out:

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"Joscelyn, did you love him? Tell me the truth, in mercy."

Slowly her eyes came back to him, soft and blue, kindled with a flame he had never seen before. But before she could speak Betty opened the door.

"Eustace and I are coming to sit with you a while, for you two must be better acquainted," she said to him; and with the blindness that is a part of love, neither she nor Eustace saw that their coming was unwelcome. Before they left, Joscelyn had slipped away, carrying his question and its answer in her heart. But before she went to bed she opened the box where she kept her treasures, and kneeling in front of her fire laid upon the glowing embers the scarlet sash of an officer in the king's service.

"I have no right to keep you any longer," she whispered, as the silk crackled and crinkled, and passed away in a smoke-fringed flame—"no right, for now I know, I know!"

The quiet of the town was now frequently broken, for as February drew to a close some of the soldiers began to straggle home, some on furlough, some on dismissal. Billy Bryce, hungry for the toothsome things in his mother's pantry, and impatient for a sight of the yellow curls that sunned themselves on Janet's head, came first. But ten minutes spent in that young woman's company so dampened his spirits that for days his mother's utmost efforts in culinary arts failed to tempt him. Janet knew the very hour of his arrival, and she also knew that it was two hours before he came to seek her. She could not know that his stay with his mother had been as unwilling as it was dutiful; so, to complicate matters a little more, she had gone out to pay some calls that might have waited a month. But he found her at last on Joscelyn's porch, her hands in her muff, her curls bobbing from under her hood to the fur-trimmed tippet below, where the winter sunshine seemed to gather itself into a focus. He waved to her from half-way down the square, but she only squinted up her eyes as in a vain effort at recognition.

"Well, I declare," she exclaimed patronizingly, as he sprang eagerly up the steps, "if it isn't Mistress Bryce's little Billy! Why, Billy, child, you must have grown quite an inch since you went away. How is your mother to-day?"

Her tone and manner were indescribably superior, as though she were talking to a child of six, so that the amazed and abashed boy, instead of hugging her in his long arms, as he wanted to, took the tips of the little fingers she put out to him, and stammeringly and solicitously asked if she had been quite well since he saw her last. She said it was a long time to remember, but she would do the best she could, and immediately began to count off the number of headaches and toothaches she had had in the past two years, until Joscelyn, sorry for the boy's unprovoked misery, stopped her abruptly, and finally sent Billy across the street to pour out his disappointment to Richard.

"Janet, you little barbarian, you have no heart!"

"Oh, yes I have," replied that imperturbable young woman; "I have a great big heart for a grown man, but you see I do not particularly care for children who are still dangling at their mother's apron-string."

Even a lecture from Richard did her no good, for all the while he was speaking she sat studying the effect of her high-heeled shoe on Betty's blue footstool, and answered his peroration about Billy's broken heart with the utterly irrelevant assertion that Frederick Wyley said she had the prettiest foot in the colonies. So Billy's cause was not advanced any.

"I'll declare, Billy Bryce looks like a child with perpetual cramps," Mistress Strudwick exclaimed to Joscelyn one day, when the lad passed the window where the two sat, and then she glanced down the room to her medicine box.

"But it is a course of sweets, not bitters, that he needs," laughed Joscelyn. "It's his heart, and not his stomach, that ails Billy."

"Half the lovesickness in the world is nothing but dyspepsia; mighty few cases of disappointed affection outlast a torpid liver."

"I never heard you make such an unsentimental remark."

"You never heard me tell such a truth. Boneset and senna is the thing for Billy, and I'll see he gets a bottle. If it does not cure his disappointment, it will at least kill off that particular brand of long face he is wearing. No wonder Janet turns up her nose at him."

Then other soldiers began to arrive. Thomas Nash got sick-leave from Washing-

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ton's staff; and from the south came Master Strudwick, more anxious for a sight of home and wife than for the gold which the dissatisfied army was awaiting; and out of the north came Peter Ruffin, a weird wraith of his former self, to tell anew the horrible story of the prison-ships. The other Hillsboro' man who had been with him had succumbed to the plague.

"And Dame Grant?" asked Richard, when Peter came to see him.

"She, too, fell a victim to the disease of the hulks. I knew you had escaped in safety, because one day she came to the ship wearing a new woollen hood, and when we twitted her about it over the rail, she said that Dick Clevering's sweetheart had sent it to her out of gratitude from the South."

"I helped to knit it," Betty cried, while Joscelyn's eyes were not lifted from the floor. In the semi-twilight of the room Richard reached out and touched her hand gently.

"It was like your generous heart."

Nor did these home-coming men bring the only tidings from the outside world. Now and then letters came that set the tongues to wagging, now with news of Washington's refusal of a crown, now with a description of Mary Singleton's marriage to Edward Moore; and one day Richard had one from Corbin that made him laugh with delight:

"The miniature is set in a narrow gold frame, without jewels, for although I won my promotion, it was only a lieutenantcy. However, I am content. I was at Guilford Court House the day Tarleton was wounded. Soon I am going home, with my pockets full of American pebbles, to claim the original of the picture and bring her back here to this great country to enjoy the freedom I am glad you won."

And when Joscelyn went home after hearing the letter read, she again opened her box of treasures, and took from it a shining gold piece and looked at it with a startled sweetness in her eyes.

CHAPTER XXIX.

THE END OF THE THREAD.

"Does not all the blood within me
Leap to meet thee, leap to meet thee,
As the spring to meet the sunshine!"
—*Hiawatha.*

AFTER a few weeks Richard was able to leave his couch and move about a little; still hampered, however, by splints and bandages, for in his fevered tossings he had hurt his arm anew, and the setting had to be gone over again. The doctor's face was very grave as he warned him against another accident.

One afternoon, being lonely, and having no better way to pass the time, he went with Betty to her sewing society. There he protested he wished to make himself useful, and was quite willing to snip threads and tie knots. But his offer was received with scoffs, and instead he was forthwith enthroned in the best chair, served with coffee by one girl and with cake by another, and petted and praised like a prince.

"And now," said Janet Cameron, taking the stool at his feet and preparing to look very busy, "while we sew you shall tell us a story of your camp life, something that will make our blood curdle and tingle like it used to do when the war messengers rode into town, and we knew not what tidings they brought."

"Yes, tell us a story, Master Clevering," they all cried, and settled themselves to listen.

"Let it be about a real hero, Richard; and make him as tall as Goliath and as strong as Samson. We'll credit anything you say," laughed Janet, biting off a length of thread.

"And if you wish to keep Janet's attention to the end, give him jet-black hair, and call him Frederick," cried Dorothy Graham. Whereat there was a general laugh, and for which personality the speaker got a prick from Janet's needle.

"One need not draw on his imagination for heroes in those stirring times, Janet. The land was full of them," Richard answered, catching one of her shining curls and twisting it about his finger, "though of course jet-black hair and the name of Frederick is a combination to inspire any story-teller."

And then he told them of Monmouth day. And while the story was nearing its climax, and the needles were idle, who should pass along the opposite sidewalk but Mistress Joscelyn Cheshire, her skirts held daintily out of the slush and snow, while a riotous March wind set her throat ribbons in a flutter, and kissed her cheeks to a glow a lover might have envied. A more charming vision it were hard to conjure up, and the story-teller's narrative faltered, and his words

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trailed off into silence as he gazed. But immediately the slumbering ill-will of the sempsters began to show itself in sundry nods and head-tossings.

"There goes the Tory beauty," said one sneering voice, "parading herself before us out of very defiance, no doubt."

"She has been out to old Polly Little's to carry her some soup," Betty said hotly.

"And there was no other afternoon for her to go, and no other path to take but the one by this door, where we might see her! You and Richard are foolish to be always defending her; she showed you small gratitude last winter."

"Yes, and we know she sent and received spying letters about us to the British commander. I never speak to her, Tory ingrate that she is!"

And then while Betty fell to crying and Janet scolded back, declaring Joscelyn was better than all of them, the criticisms grew so harsh, and so incisive were the shrugs and lifted brows, that Richard forgot his wound, forgot the pledge of secrecy upon him, forgot everything but his anger, and rising up, cried out:

"Listen! I will tell you another story, not of a hero, but of a heroine, a slip of a girl whose courage equalled anything I ever saw upon the bloodiest battlefield, in whose presence the bravest of the brave must uncover in reverence."

And then he told them the whole story of his hiding and escape while Cornwallis held the town the winter gone. Told it forcibly, graphically as he knew how, putting Joscelyn in such a heroic light that her maligners held down their heads in shame and confusion, feeling themselves to be all-unworthy in comparison; and Dorothy was crying upon her sewing, and Janet's arm was about his neck in an unconscious, breathless gratitude for Joscelyn.

And those letters which had excited their wrath?—they were but love-notes from a British officer, whose chivalric homage had been an honor to any woman. He knew, for he had put her answers into the breast-pocket of the young officer the day they buried him on the banks of the river that flows forever to the sea.

So he finished, and thus did Joscelyn stand before them at last in her true colors.

Then with the heat of his anger still upon him, and not waiting for Betty, Richard got his hat and quitted the house. After that scene the air of the room stifled him. He could not be sorry for what he had done, but he must go straight to Joscelyn and tell her himself, and make what peace with her he might. He could better afford to bear her anger than to hear her maligned by those who would be utterly incapable of her courage or her sacrifice. He had always known he must tell his story if he heard her slandered.

He was very weak from his long stay indoors, and the excitement of the scene through which he had just passed had left his brain dizzy, so that he was all unfit to take the homeward journey alone. He did not notice the ice on the crossing until suddenly he felt himself slipping—faster, faster. He made one frantic effort to regain his balance, missed his footing, and came down with a crash and a groan upon the jagged cobblestones. He heard a woman's voice scream out in terror, saw Joscelyn kneel beside him, and then he fainted.

It destroyed his last chance, that terrible fall, the doctors said, for the arm had again been fractured and lacerated beyond cure, and to lose it was the one hope of life, and even that hope was but a slender one. When Joscelyn heard this she stayed all the afternoon in her room, holding the gold piece very hard and tight and weeping bitterly.

But the operation was successful, and for long days the patient lay quiet, getting back his hold on the world. His recovery was slower even than had been expected, but it was sure, and that was enough for thankfulness. His mother was telling him this, one gusty April twilight, when Joscelyn came into the room on one of her rare visits. The door was open, so they had not known she was there; and stopping to remove her wrap, for the day was cool and showery, she heard the end of their talk.

"Fretting is wrong, Richard. You should be thankful for so sure a recovery."

"Perchance I should; but what avails health when a man may not have that which is dearer than the strength of giants?"

"And what may that be, my son?"

"Joscelyn. I love her—love her beyond all words, all thoughts; and now I shall never possess her."

"I had long ago guessed your love for her," his mother said slowly; then added, after a pause: "But I see not why you should not possess her. You have a true

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heart, a goodly property, and a shapely figure which this accident will scarcely mar; a man like that has but to ask——"

"Nay, that is just it; a man maimed like me has no right to hamper a woman's life—to ask her love. She is grateful for the protection I have brought her, but she has no thought for me beside. I lie here and watch that clock every hour of every day, longing to see her come, hoping for some sign of awakened love, but there is none. That she comes so seldom is evidence that she means me to understand this. I shall never dare ask her again to marry me, but I shall love her always—always."

There was an infinite pathos in the last words that silenced his mother, and drew something like a sob from the girl in the shadow of the curtained door. How generous he was; how brave and true he had always been! Never once, even in their days of quarrel and make-up, had she known him lacking in courage and generosity. What would her life be now but for him, for had he not made all the crooked ways straight before her; had he not given her back the love and esteem of her neighbors, her old place in the community? Was it not to him she owed all this, and her mother's happiness besides? Gratitude, did he say? Surely that was not all there was in her heart, for gratitude did not make a girl shy and sensitive and dreamy. It was not gratitude that had made her weep so passionately over his suffering and his loss, and kiss a senseless coin in the dark of her chamber.

Presently Mistress Clevering rose and quitted the room by another door, unwilling that Richard should see her emotion. Joscelyn hesitated upon the threshold, held back by a palpitant timidity, until across the firelit silence there came her name in a sigh that was half a sob:

"Joscelyn—lost—lost!"

Then with a sudden resolve she came out of the shadow into the dim light of the room, and kneeling by his couch drew his one arm over her shoulder, and laid her head on his breast.

"I am here—Richard."

"You? Dear love, dear love, what does this mean?"

"Can you not guess?" she whispered, slipping the gold piece into his hand.

"I dare not."

"What was the gold piece to be?" Her voice was scarcely more than a thread of sound.

"Our wedding-ring—at least I hoped so once."

She pressed his fingers together over it, her face still hidden on his breast. "Give it back to me some time—in that shape."

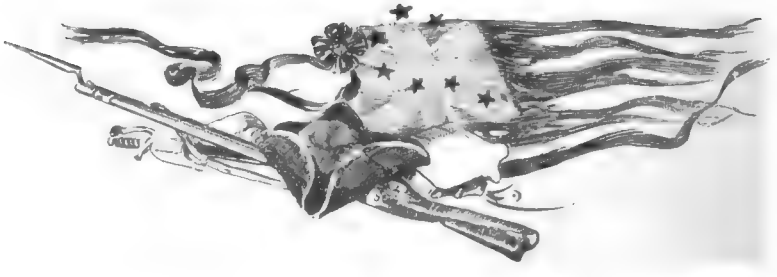
"You mean you will marry me? Speak quick, beloved!"

"I mean that—that the war is over, and I surrender myself—your prisoner, an you will take me."

"My heart's prisoner for time and eternity, thank God!"

A burned-out log snapped and fell to either side of the andirons, sending a shower of golden sparks up the wide chimney. She raised her head and looked at him, and by the fleeting gleam of the fire he found at last the light for which he had so long waited shining in the depths of her sea-blue eyes.

THE END.



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THE MAKING OF A COUNTRY HOME.

By J. P. Mowbray ("J. P. M."),
Author of "A Journey to Nature."

With Photographic Illustrations by Gertrude Käsebier, and Head and Tail-piece by Frances W. Delehanty.

CHAPTER V.

THE INCIPIENT GARDEN.

"MOVING in," to use Lucy's phrase, was an episode of ruction and destruction. The men who had been hired to bring the chattels from the station in a capacious farm wagon, drawn by a team of stalwart horses, invested the affair with the responsibility and importance of a crisis. It took four men to do what two men would have done in the city. The team was stalled twice on the road, and the neighbors turned out with fence rails and crowbars and extricated it; small boys rose out of the earth, cavorted round like young Indians, and followed the procession up to John's gate with wild hopes of a breakdown. So that when the cavalcade arrived in the road opposite the house, Lucy and Tilka came hurriedly out to learn what the noise was about, and saw a council of war being held, and were told that the fence would have to be taken down to drive in. Lucy stared at her household goods heaped up recklessly into a top-heavy pyramid, with Harold's baby-wagon clinging to the top, and mattresses, chairs, and many articles of private worth stuck on in ludicrous defiance of their associations, and exposed to the appraisement of the county. "Oh, dear," she said, "why did not John get a covered van?"

She stood there and watched with trepidation the tremendous operation of getting into the grounds. The noise and animation lifted the performance into what is called at the theatre a situation of suspense. All she could do was to hold her breath. The horses with their swaying load were to get up the little bank that separated the grounds from the road. It was a thrilling moment. The preparations went on with general vociferations and some oaths, the small boys looking on from the neighboring trees. She set her teeth and clenched her hands. A great shout went up, a whip cracked, men put their backs to the wheels, the horses plunged and reared, the load swayed, the wagon creaked, two wheels were off the ground, and amid a din of yells, it came up the bank into the enclosure and drew up at her door.

The customary way of telling such a story as this is to omit these details. But in the present case it cannot be done, because the narrator is dealing with the building of a home and not with the building of a story. Among ordinary persons like ourselves, there is a hallowed tradition that three moves are as bad as a fire. Lucy had arrived at the second stage of this experience, which may

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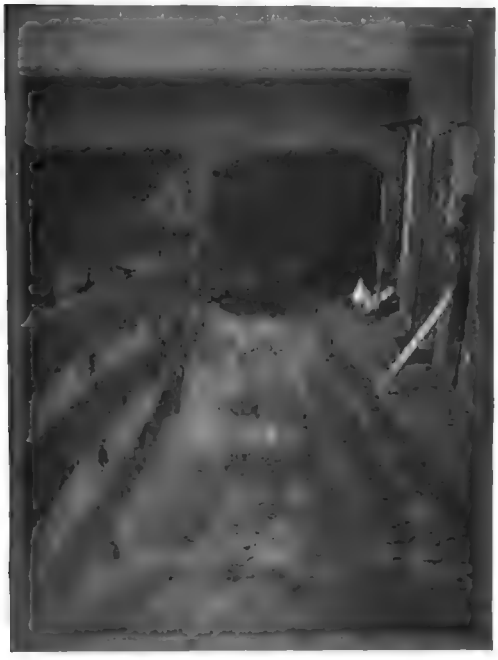
be said to be—if measured by its tears—equal to an inundation. When she saw her chattels unloaded there were shattered idols.

"Oh, John, John," she said, "you put that Japanese punch-bowl that my uncle gave me into the barrel with the smoothing irons and the jar of chow-chow. How will I ever put the pieces together?"

"And we have lost the chow-chow, I suppose," said John.

"No," replied Lucy, with dire resignation; "the chow-chow was all caught by mother's picture."

A few minutes later she called his attention to the astonishing fact that he had nailed her morocco prayer-book with a spike, through the middle of it, to the bottom or top of a packing-box.



"Moving in" brought into very clear relief the changed conditions. Physical stress accompanied everything. Chattels that in the city seemed to fit themselves easily into their places, and come noiselessly up the lift and move smoothly through doors, now stuck fast in narrow places, broke down the flooring, and looked ungainly when they were under low ceilings.

In the midst of this chaos, as they sat down to breathe, Lucy's mind seemed to wander from the condition of the furniture to the condition of her neighbors. "What kind of people, John, have we come among? The lawyer came here for me to sign the bond while you were gone, and he talked about nothing but cats. Do you think it is safe to have an insane man attend to your legal business?"

"What, Braddock? Why, he's the only man in the village who speaks to me. He came up to me as I got off the train and told me that if I had any more strawberries than I wanted, there was a neighboring hotel that would take them off my hands. That doesn't sound insane."

"And there's the woman next door," continued Lucy. "She came and screamed over the stone fence at me that I owed her ten cents for milk. Good gracious, I wonder what Kate would say to these people."

"Oh, that reminds me," said John. "I've a letter for you from Kate. It came to the house just as I was leaving. It's in my coat pocket. You don't want to read it now, do you?"

"Yes, I do," said Lucy, jumping about to find his coat. She sat down on a mattress and read the letter aloud. It was dated at Lakewood, N. J., and ran as follows: "My Dear Lucy—I have just time to drop you a line before going out. You seem to be quite in another world from mine now, dear, and I haven't heard a word from you for weeks. What are you doing with yourself? We only stop here on our way to Cape May, for we found Narragansett Pier awfully tiresome after the first few days. I hear Cape May is awfully expensive, but I hope it isn't tiresome, for Wes really needs a change. I wish you would run down there for a few days. We could have a very nice time together. You can tell John for me that I think he is real mean to keep you tied down so."

When this letter was read, Lucy and John looked at each other a moment silently, and there was a slight shadow on John's face as he waited. Finally he said: "Well, my dear?"

"We can't go down till we get the house to rights, can we, John?"

"And then?" asked John.

"Oh, then is a year off," said Lucy, looking round helplessly. "I think we've our own Cape May to look after."

All John said was: "My dear, Wesley has my sympathy—he hasn't got you."

John now gave the remainder of his vaca-

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"YOU'LL HAVE TO GET ME SOME TOOLS."

tion to the garden. In his study of it he found that Mart was a storehouse of practical knowledge without an idea beyond. The man had been employed as an under-gardener at some time, and had picked up a large fund of applicable wisdom in small matters, but as for originating or adapting, he was as helpless as the white horse.

The space ploughed and planted rather loosely for a garden was a little less than half an acre. It lay well down the slope, where there were no trees. It was grow-

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ing the usual garden truck, and was badly overrun by weeds. Mart suggested that the only trouble with the soil was that it went dry in July and August, when everything burnt up. "If I was you," he said deferentially, "I'd make a celery bed down there at the foot of the hill where it's moist."

"Oh, I guess we've everything growing here that a family needs."

Mart looked a little incredulous and superior. "As to that," he said, "I don't think it would take a premium. It hasn't got any tomato plants, egg plants, late cabbages, or cauliflower. I tried to get the old man to furnish some plants, but he wouldn't spend the money, and as for that strawberry bed, you'll have it running you out of house and home unless it's tended to. You see a garden this size ought to have a man in it all the time. You wouldn't know it if I could put in six or seven hours a day on it."

John went all over the garden carefully. (He had to pass through a strawberry bed which was nearly as large as the garden itself.) It was laid out roughly in beds containing radishes, lettuce, peas, parsley, onions, squash, spinach, beets, beans, and cucumbers—the usual supply of a country garden. Beyond were strips of sweet corn and potatoes.

"It's a shame," said Mart, "to see early potatoes eaten up before they are ripe by bugs, and onions that you can't tell from a patch of rag weed, and strawberries havin' their own way as if there wasn't a man within call. Then there's them bushes along the wall, askin' your pardon, sir, it does look pretty bad to see 'em in that shape. Why, I picked three bushels of Clark raspberries two years ago off them same bushes. Now look at 'em. You won't get a bushel."

"A bushel," repeated John. "I should think that would be ample for my small family."

"Yes, sir, but they was that prime stock they ought to have been cut out and tended to. There's about a seventy-five-foot row of 'em. They might as well have gone the whole length of the wall. Eight or ten bushel is better than one, I guess."

It seemed to John that the deeper he got into his garden, the more stupendous its needs were. He had regarded it as an appanage that took care of itself with a little incidental supervision. He left it with an oppressive sense that it was a voracious monster that demanded no end of money and toil and sleepless care, and was very apt, if you took your eye off it, to relapse into a tropical and disgraceful jungle. It was very evident that a garden, even of that size, needed a gardener and a complete outfit of tools, insecticides, irrigation plant, fertilizing factory, and relays of weed destroyers. After wrestling with the problem for some time, he struck that happy line of conduct which so often distinguishes ordinary men. He took Mart into the shed adjoining the stable and let him into his confidence. The man evidently had some pride in his skill as a gardener, and had never had the full opportunity to exhibit it. John humored him.

"Now see here, Mart," he said, "I've thought this whole matter of the garden over, and I'll tell you what I'll do. It's plain you know a good deal about the garden. I'll just turn the whole matter over to you for a month or two, and we'll see what you can do with it. You understand that I'd like to beat these people round here with a garden, don't you?"

"It wouldn't be such a hard job, sir, if I had the things to do it with."

"Very well, you get in there and give it your whole attention, and I'll make it good to you if you come out all right. All you will have to do is to take care of the horse, drive me to the depot, get the supplies, and come after me in the evening."

"You'll have to get me some tools," said Mart.

"Have you got a clear idea of what you want?"

As John took out his pad, Mart proceeded deliberately to enumerate the necessary articles, and this is the way it looked on the pad, with what Mart calculated were the prices:

One Hand Cultivator	$6 50
Two Hoes	1 25
One Trowel	25
Ten pounds of Paris Green	2 00
One large Sprinkler	75
One Grass Hook	40
One Mole Trap	1 25
One Water Barrel, Cart and Hose	11 00
Twenty-five Tomato Plants	35
Twelve Egg Plants	25
Fifty Cabbage Plants	60
Twelve Pepper Plants	20
Twelve Cauliflower Plants	25
One Garden Syringe	50
One Grindstone	2 50

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"SHE CALLED HIS ATTENTION TO THE ASTONISHING FACT THAT HE HAD NAILED HER MOROCCO PRAYER-BOOK TO THE BOTTOM OR TOP OF A PACKING-BOX."

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Two eighteen-inch White Pine Plank	4 00
Four five-inch Studding	50
Ten pounds Tenpenny Nails	35
Ten pounds Eightpenny Nails	40
One bundle of Shingles	1 10
Five pounds Shingle Nails	20

John looked the over with amused list wonder. "Aren't you running a little out of the gardening business?" he asked. "Nails and lumber and shingles are not usually included in garden supplies."

"Well, sir, I'll tell you how it is. Most of them things I ought to have, but I can get along without all of 'em. I thought that if you'd let me put up a workbench in this shed—you see I've got a few carpenter tools of my own—why, when it come to makin' a cold frame or mendin' a rake, I could have the things in good order. There's always rainy days when I could put in spare time fixin' the shingles on the stable and doin' other light jobs."

"What do you want with a water barrel?"

"Well, sir, the great trouble with a garden on a slope like this is, it's apt to go dry and burn up, and it's easier to wheel the kitchen slops down hill than to pull water up from the river, and there's nothin' better for a garden than kitchen slops. I've tried it."

"Then you've got two hoes. Wouldn't one do you?"

"I was thinkin' that my wife would lend me a hand at the weedin' when she got through her housework, and I'd like to have a spare tool for her."

"It seems to me," said John, "that your great difficulty is want of water. How would it do to run a drain-pipe from the kitchen to a cesspool on that first terrace above your beds? You could store it up there, and we could put a bit of a hose on it."

Mart's eyes brightened. "That would be a good idea, sir, but I didn't know you wanted to go to that expense."

"I don't think it will cost much more than your water cart; besides, I want to get the slops away from the house."

But John very soon found out that Mart's list did not include all the wants. They had to have a pickaxe and spade to dig the trench. Then he had to put in a pump for the cistern; then it was tile pipe and cement; then he had to get a plumber to do the fitting. Then he had to buy a hose and fittings for the cesspool tank. But it was all done in a week, and the sense of satisfaction in having accomplished it all according to plan was ample reward. Nothing that he afterwards achieved on the place gave him so much satisfaction as this little initial feat of his own engineering, and it won from Mart a succession of tributes when the summer drought came on, as we shall see.

Before John's vacation was ended he saw Mart's workbench completed, and in the rack above it were the few old-fashioned tools that the man owned. In front of it stood the grindstone with a treadle affixed, of which Mart was especially proud, seeing that his tools, which were in very bad condition, and hitherto could only be sharpened by begging the favor of some one who owned a stone, and then begging some one else to turn the crank (for it is notorious that nobody ever saw a grindstone in a farmer's barn that wasn't turned by a crank)—two conditions that had left his axe, his drawknife, and his two chisels in great lack of what the critics call incisiveness.

It was impossible to watch Mart's tender admiration for that grindstone without being touched, and this led to John's buying many tools, with a vague sense that he was adding to Mart's happiness in the enlargement of his sharpening facilities.

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But if John had known it, the workbench with its tools affected him in a similar way. He found himself several times during the day in the shed puttering at something. To most men of an executive turn, the possession of a workbench and tools more than renews the zest of youth. If there is any constructive skill at all in a man, the bench invites it into action, and if he is at all handy, it is the most remunerative piece of furniture he can have. The workshop speedily became a source of comfort and relief. There was some kind of wholesome delight in handling obedient material. It was astonishing how much better the kitchen shelves looked when he put them up himself, and with what pride he said to his wife, when she showed him a fractured piece of furniture, "Oh, send it down to the workshop; we'll soon put that to rights." John's nimble imagination jumped from that workshop, with its pleasant smell of shavings and row of steel implements, to the ultimate possibility of rebuilding his house from end to end.

It was not so with the garden. That luxurious patch was the most exacting and baffling element of his new life for two months. The deeper he became entangled in its meshes, the more imperative were its wants and the more insuperable its difficulties. He saw the tomato and cabbage plants set out, and believed the work was done. But he soon found out that it required the incessant care of Mart and himself to preserve them from the cutworms, the moles, and the weeds.

There was one onion bed thirty-five feet long that expanded his knowledge of practical gardening more than anything else. It required the attention of three able-bodied persons to keep it visible to the eye. Mart and Tilka and John worked at it with heroic persistence, to get the weeds out, and it baffled them. By no system of calculation could he figure out that the crop at its best would pay for the labor expended on it. He got up at four o'clock and found Mart and Tilka down on their knees already pulling out a fresh crop of weeds. As near

"'I THINK WHEN YOU HAVE A GARDEN, YOU SHOULD A PIG GET.'"

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as he could estimate with his pad, each onion would cost in foot-pounds of labor about twenty-five cents, and he could buy onions at the store for twenty cents a peck. His peppers, which had taken root finely and looked prosperous, he found one morning had been overturned by a mole, and most of them were lying flat and wilted in the sun. In order to have any potatoes, he and Mart had to work assiduously with Paris green, until they were covered with the dust, and the garden looked like a pattern of cheap wall paper. On another occasion the horse got loose and tramped down his lettuce and peas with a placid anarchism, and John began to have grave doubts of the utility of gardens anyway. There were other forms of energy, the relation of which to results were more easily computable.

But Mart did not appear to understand the cause of the discouragement, and listened to John's cynical remarks about the garden with a quiet belief that they were an amateur's allowable ignorance.

Every amateur gardener has to go through this phase of doubt, just as does the theological student. There is a time when final causes and onions appear to be a delusion and a snare, and raising truck takes its place alongside the attempt to square the circle. But if the student in the higher criticism or the lower vegetables remains a student long enough, some liberating light falls across his disbelief and his other truck beds, especially when he has some orthodox old hand nearby who has been through it all.

"I have come to the conclusion," said John to Mart, who was still pulling weeds out of the onions, "that a garden is a very nice plaything for a capitalist, but I shall turn my attention to grass and flowers."

Mart stood up and wiped the sweat from his face with his shirt-sleeve. "Do you mean lawns?" he asked.

"Yes. A fine stretch of lawn, well-kept and green, is a special hobby of mine."

"Then all I've got to say, sir," replied Mart, "is that you've come to the wrong place. I never saw a real lawn in Rockland County. We have grass plots up here—but lawns; well, sir, it'll cost you about four times as much as a garden."

This was not encouraging, but John was incredulous. "You don't have to weed a lawn like onions," he said. "It takes care of itself."

Mart laughed. "I'd rather take care of an acre of onions than half an acre of lawns," he said. "In the first place, this soil is too dry for lawns. You'll have to

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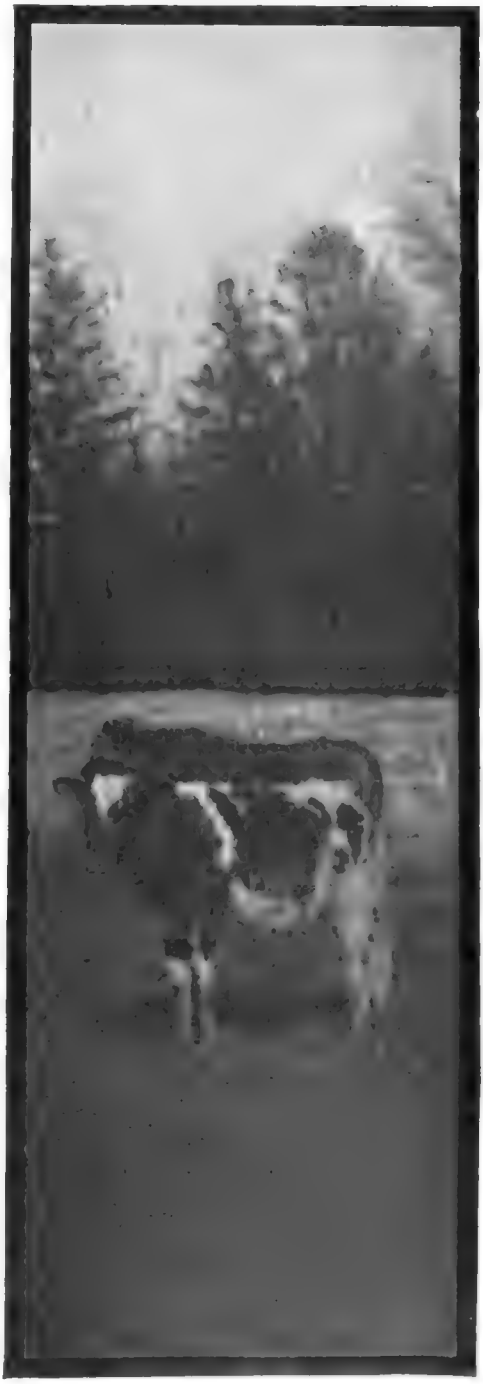
have water works first, and then it's got to be cut every other day and kept wet. So between the cutter and the hose, a man wouldn't have time for much else, and when you come to keep it well rolled and dig the moles out, it's about all a man wants to do."

Now a lawn had always been one of John's dreams, and to have it dispelled in this manner was not at all consonant with his make-up.

"I'll show you," he said, "that you are wrong. Any crop that takes all a man's time to keep the weeds out makes life a burden and onions an impertinence."

"Lord bless you, sir," replied Mart, "the onions are all right. They were planted wrong—that's all. Next year, if I'm alive, I'll lay your garden out on a field plan, in proper rows so as I can run a horse cultivator through it, and there won't be any trouble about weeds; but I couldn't undertake to keep an acre of lawn wet on top of a hill in July, unless you gave me an English climate, or put a ram down in that stream, built a water tank in front of the house, and laid a thousand feet of pipe in. Even then, I guess this soil would suck up more water than you could supply. I estimate that ten square feet of grass will drink more water than forty camels."

With a vague suspicion that Mart was simply prejudiced against lawns, John went to work to read up on the subject, and to examine the neighboring grass plots, and the deeper he got into the subject, the more respect he had for Mart's sagacity. He took several long walks in search of lawns, and failed to discover the ideal thing. He plunged into the lawn maker's manual, and came plump upon the fundamental requirement of water and a retentive soil. Then he plunged from the water into the soil, so to speak, not having a frying pan and fire handy, and got himself bewildered with sandy loams and cold substrata. He read hydraulics when his wife was asleep, and pumped his brain full of water rams, Ryder pumps, windmills, and pressure to the square inch. To relinquish his lawn was like giving up a creed. But when he studied his resources, it looked very much as if it must go the way of the garden. It was not till several weeks had passed that light broke in on these problems, and hope reset her bow of promise above his truck beds.



His vacation drew to a close, and late one Saturday afternoon he came into the house wearing a moody countenance, as if he had not quite disentangled himself from the lawn problem. He was in his shirt-sleeves, and

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he threw his straw hat into a corner of the sitting-room, and sat down with a sigh of relief in an easy chair, stretching his legs out in front of him. His wife was sitting at her cottage piano, idly running her fingers over the keys. A rosy light from the window fell across her white dress, giving it a creamy hue and touching her cheek with a mellow ripeness. The room looked surprisingly cosey and comfortable. Her little secretary stood in a corner with her letters and bills tumbled about on it, and nearby was a bouquet of wild azalias and sweet alyssum. A few light shadows danced across his picture on the wall, and a suffused pearly light seemed to be part of the pianissimo that dripped from her fingers. He could hear the occasional shouts outside as his boy romped under the trees with Tilka. In the lapses of the music he took it all in, and then said, as if to himself: "Well, after all, it is for this that we toil and spin."

His wife swung herself round on the piano-stool leisurely. He noticed that she had dressed her hair with unusual care and wore a tea rose on her breast. "Dear me," he said, "you must be expecting company."

"No," she said; "I was—but the company has come."

He thought that was very pretty. It sounded as if she had continued the pianissimo of the instrument with her mouth.

"Thank you, my dear, it's awfully good and refreshing of you. You've lost all desire to go to Cape May, haven't you?"

"I should cut a pretty figure at Cape May," she replied, "among those women who have handsome husbands who never take their dress coats off except to play golf. What should I do with a husband in a blue shirt and his finger tied up in a rag?"

"I cut myself with a jack-plane," said John apologetically. "I never heard you acknowledge before that your husband was not as handsome as Wesley."

"It never occurred to you, did it, that I married you because you were handsome?"

"It never occurred to me how you came to do it at all. I've been dying to know all these years."

"I did it because you were not handsome,

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you great goose. Where would I have been if you were as good-looking as Wes? You must see that I would have been dragged down to the level of Cape May sooner or later."

"Yes, and I wonder where I would have landed."

"Cape May, too. A man always drags a woman down to his own level."

To have one's wife play the coquette suddenly and daintily in a white dress with a tea rose on her bosom, is one of those little luxuries that ordinary men appreciate.

"Let us go out under the trees," he said. "To-morrow will be Sunday, and the last day of my vacation."

He put his arm about her gallantly, and they went out together. Tilka, who watched them at some distance, said to herself: "They think so much of each other, as if they were not married so long as three years," and then she slipped into the kitchen.

When they sat down under the trees, John said he was a little worried about that garden.

"Yes," said Lucy promptly, "it has been worrying me, too —almost to death."

"Then you can sympathize with me," said John. "I was going to propose to you that we abolish it altogether—it's too great a strain."

"Abolish the garden?" cried Lucy with astonishment.

"Yes. It's not a mathematical proposition, and I can't work it out."

"But it's an awful convenience."

"Then I don't see why it should worry *you*," said John.

"It worries me because I do not know what to do with the stuff. I wish you would go into that kitchen—it looks like a green grocer's. I'm getting to feel that it would be a luxury to go out and buy something. I wish mother had some of those heads of lettuce that are going to waste. She is so fond of lettuce, and so particular about it. You know, John, you always said she made the best salads you ever ate. What do you suppose Tilka said to me this morning—and the poor girl does her very best to eat all the stuff that's brought in—she said: 'I think when you have a garden, you should a pig get. If you do not much care for the smell, I could keep him in the cellar. It is that wicked to throw away such good greens.'"

Then John and Lucy fell to laughing. "I suppose," said he, "that she would feed the pig on strawberries if she had him in the cellar. I wonder what kind of a flavor pork would have if it were fed on strawberries. It sounds rather dainty."

"But, John, the strawberries must be fed to something —they are spoiling on our hands. Mart has been taking away ten quarts every morning, thanks to your cat-lawyer, and says he could take more if he had some one to help him pick."

"Yes, I know," remarked John; "but they'll all give out in another week, and that will be the end of the garden. I'll turn it into a lawn next year."

"If you do I'll go to Cape May. You had better let me undertake the mathematics of the garden. It's quite beyond a man's comprehension of details."

"Oh, I have been studying the books on gardening, my dear. It's all a question of water."

"And I've been studying the garden itself. Just as soon as the strawberries give out, there will be cherries, currants, and raspberries, and when they give out, there will be blackberries, and Mart says that the Sanitarium will take all that we can spare. If you're going to give the rest of your life to lawns, I will look after the garden, and I will promise you that it will not be abolished. Gracious, what would country life be without a garden! It's the old story of

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home without a mother—and speaking of mother, John——"

"Yes, but Mart says the whole thing will burn up in July. I've studied this thing, my dear, and it all resolves itself into a question of water."

"That depends on whether Mart does the talking. He's about the dryest gardener I ever met. Let me tell you something. The man who owns the Sanitarium is running up a little bill for our berries, and I suppose he would rather make a trade than pay cash, like all these people, for he spoke to Mart the other morning, and wanted to know if we needed a phaeton. He said he had one in his barn, a little old-fashioned, but perfectly sound, that he bought for his wife, and she died. It's too heavy for his pony. He told Mart that we could have it at our own price, and said he would send it up and let us try it. You know, John, you'll be away a great deal, and I don't want to be shut up in the house all the time. Besides—if mother should come up——"

"Then we'll want a new harness, my dear."

Lucy looked at John tenderly a moment, and then said: "John, how much does a new harness cost? I might earn the money helping Mart pick the berries."

"You will not have to," said John, quite magisterially. "What's that?"

"That? Why, that's the supper bell. Doesn't it sound nice?"

"Supper bell? Why, where did you get that?"

"Mother gave it to me long ago, but I never had a chance to use it till now."

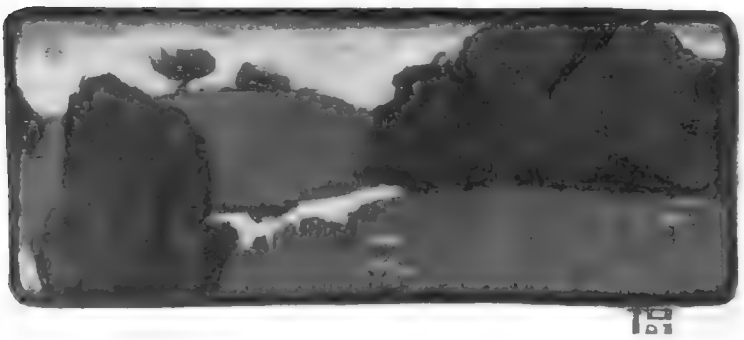
"I think you were going to say something about mother, were you not?" remarked John casually.

Lucy looked very demure as she got up. But she merely said: "I don't think I need to mention it, John, do you?"

And John, trying to look demure himself, said: "No, I don't think it's necessary. It's all right."

Then they went in to supper.

(*To be continued.*)



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THE VOICE OF MATRIMONY.

By William J. Lampton.

TWO souls
With but a single thought,
Two hearts
That beat as
ONE;
This is my biographic sketch
Which those may read
Who run,
Or stand still,
Or sit down,
Or skip entirely
If they want to.
But it's Me
Just the same,
And I point at myself
With pride,
And view every other condition
With alarm.
Me and Love:
The roses entwine
About this combine,
And love being the greatest thing
In the world,
Our combination doubles
The greatest thing in the world,
Therefore—
The conclusion is obvious
And comment is unnecessary.
Nevertheless there are those
Who rise to inquire:
"Is marriage a failure?"
Gee whiz,
What a queer lot
The mortal lot is.
Of course it's not a failure;
Because if it were,
The human heart,
With its liabilities
Of unselfish devotion,
Tenderest sentiment,
Purest purpose,
Gentlest grace,
Truest loyalty,
Noblest passion,
Sublimest sacrifice,
Would be forced into bankruptcy,
And fathers and mothers and children
Would become homeless beggars.
I'll admit I'm pretty hard sledding
At times,
And some folks don't find me
To be
All their fancy had painted,
But I'm not in
The paint and fancy supply business,
And shouldn't be held responsible.
If people think I'm an umbrella
That fits anything
I'm put up over,
They'll be mistaken,
That's all.
Nor can anybody at all
Grab me up
And put me on
While running to catch a train,
Either.
Not much.
Nor do I always agree
To be a perfect fit
When I'm made to order.
And why should I?
Is there anything perfect
That man has devised?
I guess not;
And I wouldn't be a lonesome exception
If I could.
I am what I am,
And I can't be any ammer
Than I am,
So there.
If people aren't willing
To risk something
For big winnings,
They'd better pass me
And hunt for trouble
Somewhere else.
There's plenty of it,
Without banging away at me
Every time they drop a cog
And the running gear
Gets out of whack.
I can be the greatest happiness
Or the greatest misery
On earth,
According to how I'm managed;
And when people take me
For the money that's in it,
I make them earn all they get,
You bet.
All the same, I'm a good thing;
But being so good,
I don't quite understand
Why they won't have me in Heaven,
Do you?

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The Tenth of June 1715

(Being a Song writ for a Lady born on June the Tenth, the birthday of his Most Sacred Majesty King James III. and VIII.)

By Andrew Lang.

Day of the King and the flower!
  And the girl of my heart's delight,
The blackbird sings in the bower,
  And the nightingale sings in the night
  A song to the roses white.

Day of the flower and the King!
  When shall the sails of white
Shine on the seas and bring
  In the day, in the dawn, in the night,
  The King to his land and his right?

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Day of the rose and the may,
  After the long years' flight
Born on the King's birthday,
  Born for my heart's delight,
  With the dawn of the roses white!

Black as the blackbird's wing
  Is her hair, and her brow as white
As the white rose blossoming,
  And her eyes as the falcon's bright
  And her heart is leal to the right.

When shall the joy bells ring?
  When shall the hours unite
The right with the might of my King,
  And my heart with my heart's delight:
  In the dawn, in the day, in the night?

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Drawn by Jules Guerin from photographs.

FIRING AT AN APPROACHING HAIL-STORM.

"Thunder stops, lightning retreats to a distance, wind dies down, melting sleet or rain falls, clouds disperse, and sky clears." These effects are supposed to be due, in some mysterious way, to the smoke-ring unsettling those atmospheric conditions which would otherwise result in a hail-storm.

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SHOOTING AWAY HAILSTORMS

By Eugene P. Lyle Jr.

ILLUSTRATED FROM PHOTOGRAPHS AND SKETCHES.

THE REMARKABLE INVENTION BY WHICH SWISS AND ITALIAN PEASANTS PROTECT THEIR CROPS.

THERE is a venerable proverb about turning the sword into a ploughshare. But swords are no longer active agents, and ploughshares are vague, rural things. Still, the proverb has not been brought up to date, perhaps because it would be hard to twist the modern powder-belching engine of destruction into a lamb-like, though modern agricultural instrument. A man would keep guessing a long while to imagine a howitzer ploughing or gathering in the sheaves. But for all that, the paraphrasing of the stanch old peace-and-plenty proverb can now be actually achieved. In other words, the cannon has been impressed into the service of the crops. This is up to date, certainly. But it is not outlandish, nor bizarre, nor insane with a *fin de siècle* frenzy. Quite the contrary, it is practical, and a healthy sign of manhood and man's betterment. And it is important. It is tremendously important.

Imagine a grape-grower in his vineyard when the plants are heavy with ripening fruit. Around him is his labor of months and all his profits for a year. He has fondly shielded the vines from the pests of the insect world. And so far, the elements have been merciful. In a few days more the purpling bunches can be gathered. But just as he is thinking these things and is very thankful, he sees clouds stealing up from the horizon. Others come, and they grow together in lowering banks and darken the earth. The calm after the sultry day is deadly, and the planter knows the signs as he looks up. Hail will fall, and in the next few minutes a year of toil and of life will be taken from him. He faces unpaid notes, and more borrowing if now anybody will lend, and very likely actual indigence, and then he remembers his family. If he could only bridge over those few minutes of destruction! But Nature has ever been unreasonable in these matters. Long months of patience and labor and hope have no weight against her swift stroke of a second. Recall to mind the cyclone you have seen and what you thought then. It will not be difficult. However, Nature is a femininity easily managed, if a man knows how. Man is beginning to know how, little by little. Now, suppose that the vine-grower knew how, in that calm of menace preceding the storm. If he could only *do* something! If he could only shoot up into those clouds, or anything! And suppose he did shoot up, and Nature became pleasant and agreeable and behaved herself as she ought, and it rained and cooled the torrid summer day, without a single cruel bullet of hail. That would be tremendously important.

The tempest is one of the most violent and brutal of Nature's outbursts, and man's efforts seem so pathetically feeble that to declare that man has prevailed is at once a provocation and an excuse for scepticism. But there are the facts, nevertheless.

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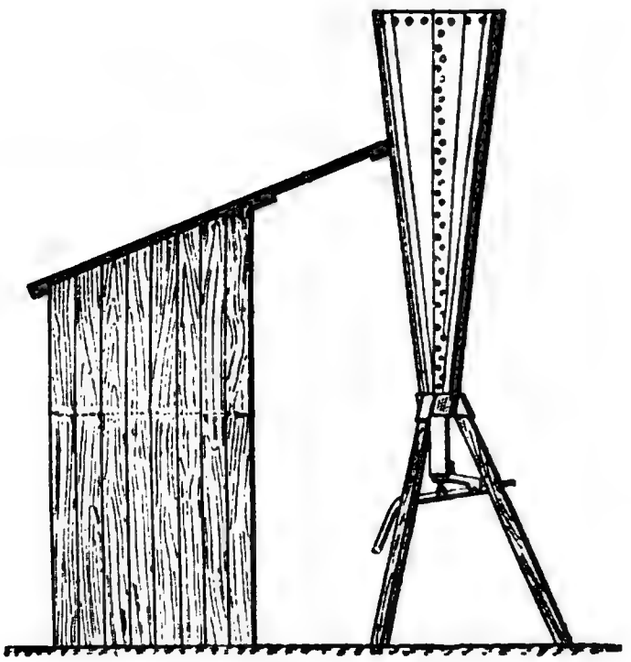
Cannons have been fired against hail-storms, and hail did not fall. You might say that hail would not have fallen, anyhow. But it did fall anyhow—that is, all around except on the spot covered by cannon. Again,



A PLEBEIAN TOOL: THE CANNON AND SHED.

there remains the other possible coincidence—namely, that the hail had no designs against that particular exempted spot in the first place. But there is still an answering fact; for once, when the shooting ceased, the rain changed to hail, and when the shooting recommenced the hail as quickly changed back to rain. This is not an isolated instance, but the general case, as reported from the vineyards of Europe.

However, when a man has doubts about a thing, he naturally wants to see it with his own eyes. Afterwards will be time enough to ponder over what the thing means and listen to statistics. In almost any grape-growing district across the Atlantic he can see hail-storm cannon, and during the season he may not have to wait long for a hail-storm as a target. If he has orchards or vineyards, he dreads no calamity more than these same hail-storms, and he will be tremulous with eagerness over the experiment. He might go down into Southern France, as the writer did, and there he will find batteries systematically installed for bombarding the overcast skies that so often make "sunny" France a misnomer. There is the famous wine district of the Beaujolais, for instance, where the cannon were first tried in France; and in the commune of Denicé the conditions are especially good for investigation. Denicé counts only 953 hectares (about 2,355 acres) of vineyards, yet it was ravaged by hail eight times during the ten years ending with 1897. Her annual losses ranged from four to seven figures, with a total of 4,624,399 francs, nearly $879,000. In 1897 the cannon were set up, a system of fifty-two in all, and now the people thankfully and fervently tell you that it hails no more in Denicé. They are convinced, absolutely.

At the hotels in the Beaujolais most of the guests are vine-growers, and the talk you hear at table is similar to that heard around the board of any hotel of any small agricultural town of the United States. It is of crops and weather, of course, and therefore of hail cannon. But what is significant, these discussions are matter-of-fact. The planters have already come to look on the cannon as an implement of the farm simply. They do not talk of it as something new and unfamiliar, like an earthquake or airship, but as a thing tried and known. I noticed that any differences of opinion concerned details only, as of powder, handling, or this make or that. It was just as though a tableful of farmers at Lee's Summit, Mo., were talking reaping machines.

The first cannon that I saw in operation was in the yards of a cannon factory at Villefranche (Rhone). It was of the pattern first introduced into the Beaujolais, but simplified and improved by a French viticulturist, Mons. V. Vermorel. After all, it was but an awkward, unromantic-looking contrivance, a sort of smoke-stack perched on a tripod. It had none of the aspects of a death-dealing apparatus, and a closer inspection revealed nothing of the intricate mechanism or delicately adjusted clockwork, such as one would expect of a wonderful invention that steals the shafts out of the clouds. The thing was absurdly simple, in ludicrous disproportion to the giant's work set before it. The farmer in all his fields and sheds, or even on his scrap-heap, has not a commoner, more plebeian tool. Yet it is one of his sturdiest, and cares naught for the weather it defies; for this cannon, unlike other modern cannons, needs no nursing against rust or grit. It is as hardy as some discarded blacksmith's anvil that lies forgotten in a vacant lot till, each Fourth of July, it is dragged out by young patriots

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with gleeful designs on the neighborhood quiet.

A veteran *artilleur* who had lost a leg in the service demonstrated how simply and safely this particular gun can be handled. He first produced one of the empty cartridges. This was of specially forged steel, about eight inches long and one and one-half inch thick. He adjusted a percussion cap, rammed in eighty grammes, about one-fifth pound of mining powder, and ended with a wad of soft wood or cork, much the same as one loads a shot-gun cartridge. To charge the cannon, he pulled down the breech, a steel block, which swings on a pin in a stirrup under the barrel, and slipped the cartridge into the chamber of the block. Next he threw the breech back into place, and fastened it by a second pin in the top of the stirrup. A lever beneath, which jerks the hammer up against the cap, and a string attached to the lever, complete the apparatus. The artilleryman advised us to watch for the whirlwind-ring, and then he pulled the string. The explosion sounded like the heavy boom of rock-blasting. You knew vaguely that the tripod was hidden in smoke, and that a white cloud had puffed from the mouth of the funnel. Then, as though growing out of the shock of the explosion, there came the sound of a long, shrill whistling. It was like the fierce metallic singing of some monster tuning-fork, mounting to a more angry pitch as it hurled higher in air. There, away up in the sky, was a gauzy ring as of smoke, still ascending and still buzzing on that shrill crescendo note. The ring was outlined against the deep blue like a soft, silky wreath, and in the rays of the sun it was brilliant and changing, and then again shaded. A second later, and it had vanished in space. That, briefly, is the *tore*, or whirlwind-ring, which bursts from the cannon, plunges into the clouds, and there causes that commotion which is believed to prevent hail.

The large smoke-ring, shown in the picture on page 624, was shot from a powerful cannon constructed for experimenting. It admits a charge of one kilo. (2⅓ lbs.). The photographs from which the two drawings in this article were made were procured by exposure of one-eightieth and one-ninetieth of a second. Some of them, where the ring is still near the mouth of the cannon, show particles of ignited powder, but no indication of another projectile. The whistling of the ring from this cannon lasts twenty-five and twenty-six seconds, but this does not imply so very great a distance of travel when we remember that the ring slows up as it ascends. The ring from the ordinary eighty-gramme cannon whistles for twelve and eighteen seconds.

An actual combat between clouds and cannon is an interesting spectacle. It is more than likely to be stirring. Here is one that proved so, though, after all, it was but a lively skirmish. Throughout the morning the sun had burned down on the beautiful vineyards of Denicé. But towards noon heavy dark clouds began to climb up sluggishly out of the southwest. These were the first scouts of the enemy. But they were not unexpected, for a bulletin of warning had gone out long before from the meteorological bureau. It needed only the hoisting of a yellow flag from the central station, and within a few minutes thereafter all the guns were manned. By now the forerunners of the storm had rolled on and up towards the zenith, and close behind them crowded the solid black phalanx of the main army itself. This was the precise second for the attack to begin.

The director of artillery in the central station gave the signal by firing the first gun. There was the sudden puff of chalky smoke and the whistling of the whirlwind-ring as it tore into the clouds. A second gun answered, not 500 yards away, and a new whistling reënforced the dying away of the first. In the same instant the cotton-like patches of smoke burst out here and there over the vineyards, and with each came the dull boom and the angry note of the projectile. On the part of the earth the engagement had become general. From a low hill the war correspondent under an umbrella could view the battle at his ease. Below him was one combatant, above him the other. The firing between the two was up and down—a turned-around, Wonderland sort of a conflict.

As yet the clouds had made no answer, but they were lowering and sullen. Under them lay the camp of the besieged. In the gloom the long rows of vines seemed a lonely region of peace, but they were reposing in extremest peril. Under the ominous darkening of the day, the expanse of stillness had the effect of crouching as in fear. At intervals the ammunition sheds, like sentry-boxes, stood out in heavy relief, while over

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each a funnel-like cannón-barrel pointed upwards. The only signs of life over the desolate stretch were the artillerymen. There were two of these to each gun, and they looked like feverishly toiling gnomes as they loaded and fired, and darted from the sentinel-box to the gun and back again. The cottony patches of smoke that hovered lazily over the vines kept spurting up anew, and the low booming of the explosions was almost continuous, while the regions overhead were filled with the metallic screechings.

Still, all this labor was so far pitifully inadequate; for above, the clouds were as black and stern as ever, inexorably preparing devastation.

But even as the spectator on the hill was losing hope for the much-vaunted cannon, he looked up again. There was a disturbance going on in the darkest cloud, just over the vineyards. It looked like billows of rolling, tossing smoke up there. Then all at once the cloud opened, and through the rift was the glorious gold of the afternoon sun. At last, here was a breach in the enemy's flank. A gunner below shouted involuntarily, and all of them worked faster and faster yet. Each cannon was counting two, three, shots to the minute. Other breaks showed in the clouds. There was a moment of wavering, and then panic. The dark-browed invader broke and fled. He scattered towards the hills, and in his retreat he sent down a discouraged volley—of rain-drops.

Bordering these same vineyards, not two miles away, there were others not protected by cannon. Here the hail fell in disastrous abundance.

In another instance the effects were even more decisive. The salvos from all the cannon began when the sky was three-quarters overcast. In ninety seconds the first break in the clouds was noted, and in three minutes the mass separated into two parts, with the blue of the sky between. At the same time the clouds slowly dispersed towards the northeast. A shower fell in one place, a heavy rain in another, while in a third the wind raised a five-minutes' dust-storm. Half an hour later the sky was clear.

A vivid description is that of Professor Doleric, director of the viticulture school at Rudolfswert, Austria. Professor Doleric's experience is the more significant because he had up till then scouted all possibility of fighting hail by cannon. The battle which converted him was an exceptionally hard-fought one, with Nature in her most savage mood, and poor man struggling and desperate. It was a terrible storm that threatened the Stadtberge. The clouds were in three layers, the lowest dark, the middle brownish, the top light gray. Lightning darted venomously, and the thunder came in piercing claps. All the while could be heard the cannon incessantly firing from the three stations below. The storm, however, moved nearer and nearer, unchecked. It gained the heights of Stadtberge, and instantly the mountain was lost in the clouds. The unbelieving professor knew for certain now that the grapes were doomed. An artillery of hail was forming in those clouds, and its fall seemed inevitable. But the gunners worked on, inspired by faith alone. Stones of hail beat their heads and hands. So far the professor was right. The storm had burst in earnest. Despair took the gunners, but they loaded and fired as ever, and the cannon grew hot. For the moment it was a hand-to-hand fight. Then, as by a miracle, the hailstones turned into big, slushy flakes. The clouds were ripped asunder, and a grand rain set in for the rest of the day!

Records of such successes are well-nigh innumerable, and they are certainly convincing. Nearly every vine-grower in this part of Europe can cite several, besides one special pet instance that converted him to the shooting cult. Here is a notable case, because it is a well-authenticated contrast between protected vineyards and those not so defended.

On August 9, 1897, an unusually frightful storm passed over Styria, Austria, from border to border, and crossed into Hungary. It lasted two hours and twenty minutes, and travelled at a speed of over thirty miles an hour. Its path was five miles wide, and nearly eighty long. Some of the hailstones measured fully two inches in diameter. That same day was made memorable by a second storm, similar to the first, and almost parallel, except at one point where the two paths crossed. Hail cannon at that time were hardly known, but their inventor, Burgomaster Albert Stiger of Windisch-Feistritz in Styria, had already set up stations among his own vines. During the two storms he and his men fired over 2,000 shots. These appeared to break the violence of the tempests. At any rate, the

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Drawn by Jules Guerin from photographs.

JUST AFTER A VERTICAL SHOT.

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Burgomaster gathered a magnificent harvest of grapes that year, whereas his neighbors, who had not been experimented upon with cannon, lost one-half and three-quarters of their vintages. Mr. Stiger's vineyards, moreover, were in the midst of the ravaged district and just under the centre of the crossing of the two storms.

CANNON "STIGER."

The agricultural records of Italy are filled with similar cases. At the planters' convention of Casale in 1899, 600 delegates from all parts of the country testified. Once a single isolated cannon reduced the damage from 70 to 10 per cent. During a storm at Ozzano 500 shots were fired from eleven stations. Result, no hail; but less than a mile away from the last cannon the hail fell violently. Several delegates told of hail commencing to fall, but stopping as soon as the firing began. Others noted that the thunder and lightning also ceased. In one instance the hail became lumpy snowflakes, then big rain-drops, and finally a two-hours' shower.

It would be hard to imagine a more startling example of man's reversing the processes of Nature in his causing an Italian snow-storm in midsummer! Yet this is just what happened at Brescia, in Lombardy. The hail batteries near by had been working industriously against the clouds, when, instead of hail or rain, there came the white flakes. It was a heavy snowstorm, and lasted over an hour. For witnesses, there is the whole city.

In general, the effects of the shooting are: thunder stops, lightning retreats to a distance, wind dies down, melting sleet or rain falls, clouds disperse, and sky clears.

And the cause of all these effects? That is just exactly what people do not know yet. As a rule, those meteorologists who try to explain point to the wind-ring that bursts from the cannon's mouth and whirls aloft among the clouds.

But the ring not only unsettles the conditions up there, it has sadly unsettled the savants as well. The theories about hail never had been settled, for that matter; but the whirlwind-ring has twisted them all about anew, and there is a great wordy commotion. Some scientists seek to adjust their theories to the new phenomenon, while others try to argue away the whirlwind as too disturbing an element to be considered at all. Some time ago the French Academy of Sciences offered the solution of the hail-formation problem for its *grand prix* in mathematics, but none of the answers were satisfactory, and the problem had to be withdrawn. Still, European meteorologists have studied hail as an American agricultural scientist studies an insect pest—that is, to destroy it. So there are plenty of theories for a choice, many of them pretty and ingenious. Let us examine briefly those two which get along the most comfortably with the whirlwind-ring. They have been made to fit *ex post facto*, and they do fit fairly well.

Here is the explanation advanced by Prof. F. Houdaille, the agricultural meteorologist of Montpellier, France. He maintains that vapor does not condense immediately in the saturated air. But if vapor be abruptly chilled, little globules are at once precipitated. Again, just as a sudden shock causes a solution of soda sulphate to solidify, so the air disturbance from a cannon-shot may cause the vapor to condense on the rain-duct that is suspended in the cloud. And, finally, the high electric tension in the hail-clouds, which causes the whirlwind movements favorable to the growth of hailstones, can be modified or diminished by a current of ascending hot air, which creates a sort of conductor between the cloud and the ground. The shaking of the atmosphere by the detonation from the cannon interrupts the state of supersaturation in the lower cloud, and the sleet falling from the higher clouds will no longer find the material on which to grow into hailstones, simply because the moisture that would otherwise nourish it has already fallen to earth in the form of rain. In other words, the column of hot air created by the shot is like an immense lightning-rod which draws out the storm force.

The second theory is that embodied in a paper of MM. Vermorel et Gastine, read before the Académie des Sciences. Detonation is hardly the cause of stopping the hail, they say; else why does not thunder have the same effect? So they shift for another answer, and find it in the gaseous projec-

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tile, or whirlwind-ring. To determine the nature of this projectile, they shot it against an analyzing screen or target of thin paper pasted over a wire netting. At sixty and eighty metres, about sixty-five and eighty-eight yards, the whirlwind-ring went neatly through the paper, leaving centre and border of puncture intact. The circle measured eight inches thick, and between six and seven feet in diameter. A shotgun with a blank shell produced the same result, size in proportion. These experiments do away with the idea of any other projectile, such as one that precedes the ring, for all other parts of the screen, including centre of puncture, were not disturbed. This ring, though a gaseous mass, shows properties of forceful energy. It is geometrically perfect, and is so rapid and majestic as to have the aspect of an extraordinary swiftness, though it travels but a thousand feet a second. The blow through the screen shows the great mechanic energy which these projectiles gather and condense in their formation. The paper is pierced as by a solid hoop, and branches and leaves of trees are snapped off clean. Another experiment testifies that it lifted a hanging wooden target that weighed over 200 pounds. Its power is similar to the destructive energy of waterspouts. But it may be easily turned by solid obstacles. For instance, if one part strikes the corner of a building, the whole ring will turn and break against the wall. This also shows its integral strength. A wire has no effect on the ring, but the wire itself is twanged violently and loosened.

ALBERT STIGER, BURGOMASTER OF WINDISCH-FEISTRITZ, STYRIA, AUSTRIA, FIRST INVENTOR OF HAILSTORM CANNON.

The whirlwind-ring has been much studied by scientists, notably Helmholtz, who forced smoke-rings from the circular hole of a box. But MM. Vermorel et Gastine hold that the cannon ring is not of smoke, but of air pushed out with tremendous force. As proof, they say that smokeless powder produces the same rings.

As to their hail theory: they cite some meteorologists who place the genesis of hail at a height of from two to two and a half miles, under the cirrus, or loftiest clouds, which are formed of ice needles. Others hold that hail originates in the lower clouds, under the action of descending whirlwinds. These whirlwinds come from the lofty strata, where the cold is intense, and consequently chill the lower clouds. Drops of ice result, and these are held in suspension until they grow too heavy and fall as hailstones.

And now as to effect of the cannon shooting. The authors of the explanation admit they are not entirely satisfied with it, and they would be delighted if some other student could muster up a better one. However, here is their theory: First, the sustained bombardment of wind-rings push up little by little the lower strata of calm, warm air, till they are forced against the storm-clouds themselves. Here they meet the descending whirlwinds of cold air, which they turn about, press back, and disperse. Thus the formation of hail is checked at its very beginning. Should there be any hailstones already there, the warm air turns them into slushy lumps like snow. In conclusion, the authors repeat that their theory is merely provisional. When the effects of the cannon shall be demonstrated, then the present blind fighting against hail can be reduced to an exact science, with results assured and inevitable. Meantime the vine-grower keeps on firing. He cares much

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THE CANNON AND ARTILLERYMAN'S BOX AMONG THE VINES. THE ARTILLERYMAN IS IN THE ACT OF PUTTING CARTRIDGE IN THE BREECH OF THE CANNON.

more for the unquestioned results than for causes, however plausible.

The cost of shooting is almost as well within universal reach as the methods of firing. In the first place, isolated or unorganized firing has seldom proved effective. There should be one cannon to every fifty or sixty hectares, that is, every 124 or 144 acres. On this basis the initial cost (in France) is:

One cannon	130 francs
One cabin	50 "
10 to 20 shells	50 "
Loading tools	20 "
	250 francs,

or a little less than forty cents an acre.

The annual cost on a basis of 500 shots is:

	FRANCS.
500 charges of 80 grammes, according to price of powder in France	12
500 wads and caps	30
Wear on material	27
	69

or about ten cents a year for each acre.

There is nothing complicated about using the cannon, though something like military discipline may be required. The cannon should be set up 500 yards apart, in squares preferably. A line of the big thirteen-foot guns that shoot 120 and 180 grammes of powder may be placed advantageously on the storm side of the vineyard or orchard. Each cannon should be served by two men, one to fire, the other to reload. They may be regular farm-hands trained to this emergency. The director of the battery gives his orders by a code of signals, either flags or shots, and the director in his turn may profit by studying the weather bulletins. Firing should begin as the clouds near the zenith. At first one shot a minute for each station may be enough, sometimes increased to three a minute, though never more than the latter. When rain begins to fall the firing may slow down to one a minute, and stop altogether when the rain diminishes, for by that time the axis of the storm has passed over the cannon. Of course, the defenders must watch out for a second storm immediately following. It is, as you will see, beautifully simple.

The history of the hailstorm cannon is extremely brief, so far as years go, but it is something to be worthy of history at all in so short a time. The terror of hail is as old as Adam's first planting season, and the hysterical efforts of man to do away with it

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date from that same springtime. It is just another phase of man's striving to climb back into Eden, where it does not hail. So he rang bells and made other noises, at first in religious appeal, and then with a vague notion of turning the storm by deafening detonations. Neither is the more scientific idea of shooting against clouds a new one. In 1760 the Chevalier de Jancourt, a physicist, noted that it never hailed on besieged towns, and urged wise men to get to work against what he called the most costly form of divine wrath. But the wise men were not wise enough, and the peasants rang their bells as before, and then declared that it would have hailed harder if they had not rung them.

Not until 1896 was the first real hail cannon fired. Albert Stiger, burgomaster and vine-grower, was the inventor. It was simply an old discarded locomotive smoke-stack set on an oak stump, with an opening cut in the side of the stump, so that a mortar could be slipped under the stack (see cut, page 630). This mortar was loaded with eighty grammes of powder, plugged with a cork wad, and fired off by a fuse. How the smoke-stack succeeded has already been mentioned above. Mr. Stiger refused to patent his invention, on account of small planters, but he at once began manufacturing the cannon. Within a year there were thirty shooting stations in the district, and it has not hailed in that region since.

Down into the Tyrol came word of the magic *wetterschiessen* (weather cannon), and soon all Piedmont and Lombardy were eager over the charm of *spari contro la grandina*. France also was a sufferer from hail. There stories were still told of the great storm of July 13, 1788, which travelled in a devastating line across Europe to the Baltic, three and four leagues wide, sixteen and one-half leagues an hour. Some of the hailstones weighed 250 grammes (over half a pound). The official figures placed the loss in France at 24,000,000 francs, a little less than $5,000,000. But more recently, in the eight years from 1890 to 1897, the Department of the Rhone alone had lost 46,895,289 francs. Another index of her woes was the insurance rates, 15 and 17½ per cent. of crops, with settlements bad at that. Naturally she wanted the weather cannon, and with characteristic French gratitude she coined a name for it—*paragrêle*.

CANNON INSTALLED. THE HORIZONTAL ONE IS FOR EXPERIMENTS.

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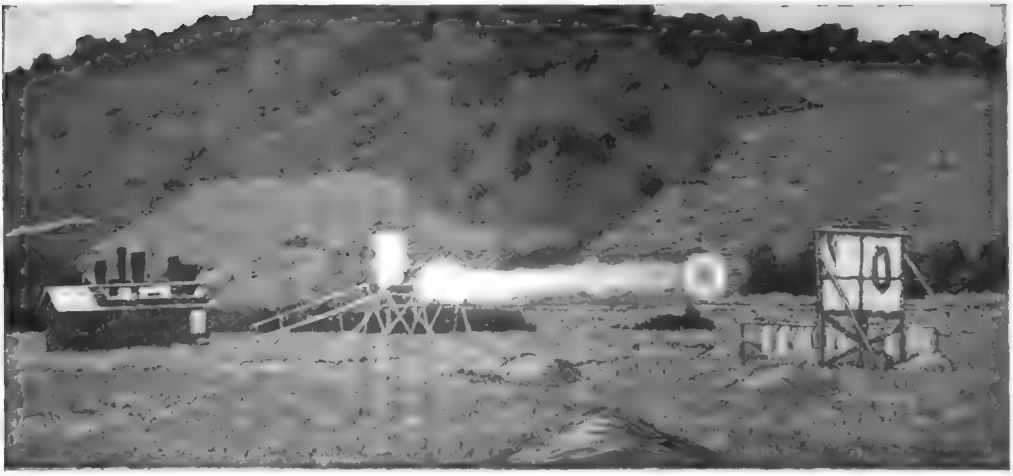

HORIZONTAL TEST SHOOTING, SHOWING THE RING FIRING AT THE TARGET.

Soon after followed the first anti-hail congress, at Casale, Italy, in 1899 (noted above), and from then on the records take on an official character. Reports showed that over 10,000 cannon had been installed in Italy during the year, and that where their organization was adequate, the insurance companies reduced rates by one-third.

But what definitely and permanently established the hail cannon as an absolutely necessary institution was the next congress, held at Padua last November. Sixteen hundred delegates attended. Among them were the foremost meteorologists and agricultural scientists of Southern Europe. The French Government sent a special representative, Professor Houdaille, who was made honorary president. The Russian Government also had a man there. A ministerial secretary welcomed the delegates. He stated that the Italian Government wished to encourage the manufacture and use of cannon. Abolition of powder tax, efficient weather bulletin service, and laws making organized cannon protection compulsory were possibilities of the near future.

The reports submitted were generally so favorable that all further doubts of the efficiency of shooting were buried deep. These reports came from the Tyrol, Lombardy, Piedmont—in fact, from all the provinces of Italy, from Austria, Hungary, Switzerland, Spain, and France. In Italy alone the increase of cannon stations for the past year was 700 per cent. Where failures had been noted, they were frankly confessed. But in most cases these were traced to stupidity and poor discipline of the peasants in operating, or else the guns were in poor repair, the powder was wet, or the firing was not rapid enough or not timed right. None of the adverse reports discouraged anybody, for success had invariably followed intelligent experimenting. The scientists present had to admit the effects of the cannon, and they united in declaring that all hail theories must henceforth conform to these effects. The congress, as a whole, recorded its opinion that hail can be prevented by firing cannon.

Eighty-five exhibitors submitted cannon for approval. These were of all shapes and sizes, from three to nine metres (about ten to thirty feet) high, worked by all sorts of mechanisms. Many were considered too complicated, others too frail. The most extraordinary one, worthy even of American ingenuity, was the Maggiora-Blanchi gun. The explosive is acetylene gas, generated and fired by clockwork. An electric spark ignites the mixture of gas and air, and the frightful clap that follows causes a shudder through the whole body. An entire battery can be operated by one man, who simply presses a button to open and close the circuits. A bombardment from a hundred or more guns can thus be carried on by the planter from his fireside, who sits comfortably beside the keyboard, no matter what the storm may be outside. If claims hold good, ten seconds suffice for loading and firing all the guns, and 1,000 shots may be fired from each without recharging the

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magazine. The inventors refuse to sell, but they will insure crops against hail.

The next congress will convene this fall at Lyons, and the one next year after that at Verona.

The vast importance of the cannon may be reckoned from the interest it has provoked all over the world. In Europe, to start with, the governments are taking hold of it. The recent agricultural conventions at Paris prayed for government aid and the abolition of the powder tax. In the Senate the member from Savoy demanded of the Minister of Agriculture if he were disposed to encourage and subsidize *syndicats* for cannon protection. The minister replied that after hearing of the results in Denicé he had named a commission from the departments of finance, war, interior, and agriculture to study the question fully.. In Bulgaria the government has just decided to install fifty cannon for experimenting purposes, with a view to placing them over the entire country. At Lausanne, where a *station viticale* has been established, I found that Dr. Dufacer, chief of the meteorological observatory, had experiments under way. In fact, there is a movement to place cannon in all the vineyards of Switzerland. The canton of Neuchatel has just voted a considerable subsidy for experimenting, and a government testing grounds has already been set aside in the canton of Tessin.

In the United States the best index of the interest created was the clamor that followed the consular report from Lyons of Hon. John C. Covert. Hundreds of newspapers made comments, and one scientific publication was contemptuously sceptical. Inquiries flowed in so thick that Mr. Covert was forced to make a supplementary report. The Secretary of Agriculture was among the keenest after information. At the viticulture station founded by M. Vermorel, at Villefranche, there is a card catalogue of personal correspondents from every section of the United States, including almost every scientific institution and agricultural college, and farming and scientific reviews. All of these were most eager for knowledge about the cannon.

The Australian Government sent a man to Mr. Stiger to investigate, and the tobacco planters of Sumatra have also appealed to him. In South Africa the farmers want the cannon for bringing down rain from the

PAPER SCREEN PIERCED BY RING FROM THE GIANT CANNON OF 6.56 FEET IN DIAMETER AT THE MOUTH. THE UPPER HALF OF THE RING PASSED OVER THE TOP OF THE SCREEN, THUS LEAVING ONLY THE SEMICIRCULAR MARK SHOWN IN THE PICTURE.

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clouds that so often pass them over. They do not confound it, however, with the American rain-making machine. They know that moisture must first be present before bombarding or anything else can be of effect. As to other possibilities of the cannon, there is that of abolishing frost. Herbs and resinous wood are often burned so as to shelter the plants under a screen of smoke, but just a few nights ago the cannon were tried instead in the Beaujolais. Two of them were apportioned to a hectare, about two and one-half acres, and they were fired horizontally about two yards over the fields. The ground was rendered damp and warm, though the surrounding soil was cold and frost-laden. But the most astounding use of this artillery has been found in Madagascar and Algeria —to fight grasshoppers. It is claimed that the shot cuts a discouraging swath in the invading swarms. And now the question is, what might it not do to a cyclone? There is serious food for reflection in that same question.

THE GIANT CANNON USED FOR EXPERIMENTING.

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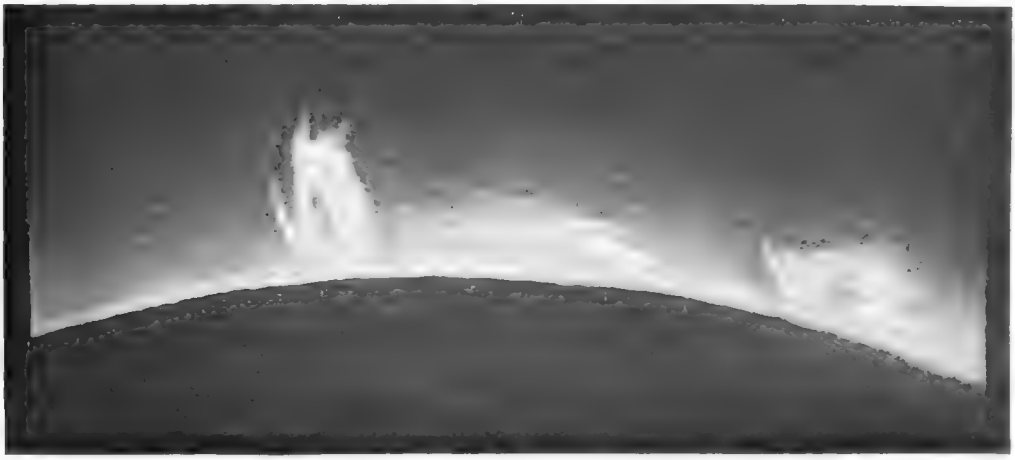
SOLAR PROMINENCES, OR RED FLAMES, DUE TO TERRIFIC OUTBURSTS OF HYDROGEN GAS FROM THE ENVELOPE OF THE SUN.



PHOTOGRAPHING THE SUN.

HOW AND WHY THE SCIENTISTS STUDY THE SUN'S CORONA.

By Maximilian Foster.

INFLEXIBLE Nature, moving in her own self-appointed plane, has this year chosen to lavish upon a remote and difficult region of the world one of the most heroic of all her phenomena—a total eclipse of the sun. Furthermore, as if to lay an additional burden upon science, the fullest phase of the event will be projected in a territory whose unstable atmospheric conditions threaten every effort with a failure—an imposing element of chance that, at the best, clouds the result in uncertainty.

The date of the eclipse is May 17th. Under the present reckoning, which may or may not be affected by minor errors, its maximum duration in the centre of its path will be 6.5 minutes—an interval for observation vastly superior to that of the brief eclipse of May 28, 1900. But, while the event of last year was of much less duration, the conditions for viewing it were far more advantageous. In the first place, its track traversed a country largely populated; it was apparent to hundreds of thousands of interested persons, and preliminary observations of the weather gave some assurance that all would not end in distressing failure through an obscuring of the sky.

In the forthcoming event the conditions are essentially different. The centre of the moon's shadow-path will begin its course in the Indian Ocean west of Madagascar, and after skirting the island's southern coast, will cross Reunion and Mauritius islands, thence traversing the open sea to the Malay Archipelago. Here it will pass through Sumatra, Borneo, Celebes, Ceram, and New Guinea, and ultimately terminate at sunset east of the Guinea coast.

The weather in this quarter of the globe is notoriously unsettled, and without clear and smiling skies neither the photographic nor the visual recording of the eclipse can succeed. Yet, notwithstanding all these unpropitious conditions, nearly every important astronomical observatory in America and Great Britain and on the Continent has sent a delegation to the islands prepared to do what it can. Some may succeed and others fail, but without optimism and a supreme hope nothing can be accomplished, and to succeed in astronomy it seems necessary to discount chance in every calculation. Few outside the profession, however, understand the full significance of the toil, the expense, and the nerve-racking mental torture incident to such work. In such inaccessible regions the cost and labor of

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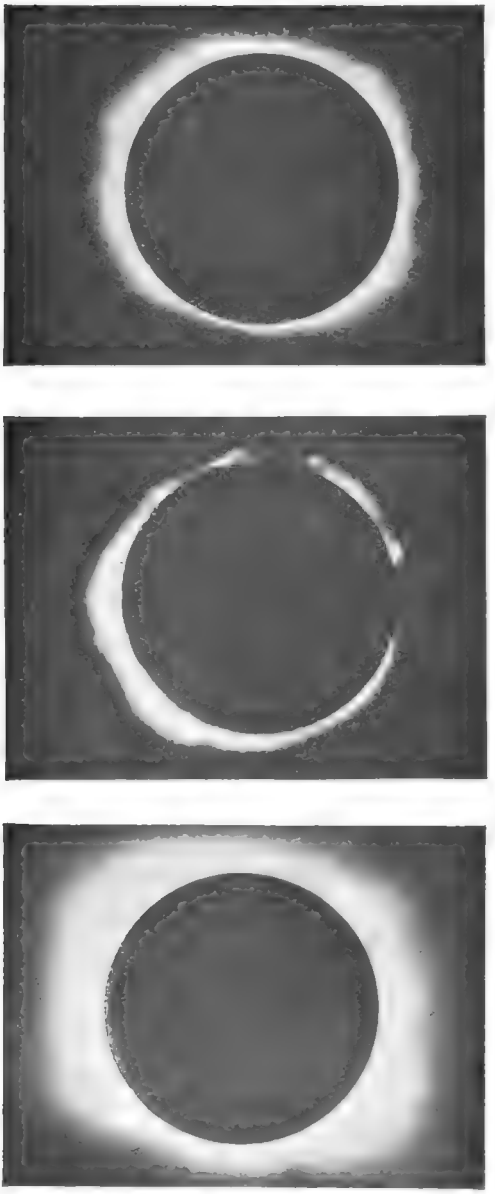

FROM PHOTOGRAPHS SHOWING THE EXTENSIONS AND INNER DETAILS OF THE SUN'S CORONA.

transporting heavy instruments of the utmost delicacy are great indeed. Eager to view the event, the expedition may go half across the world, labor strenuously for weeks to erect and arrange an observatory, and then in the end be dismally baffled by a tantalizing skim of vapor that screens the demonstration of the heavens. In 1889 the expeditions to Cape Ledo, West Africa, transported a vast amount of astronomical material to that inaccessible point, spent weeks in arranging its complex battery of instruments, and then at the critical moment a brief scurry of clouds obscured all that these patient, hopeful folk had come so many leagues to view.

Annual observations prior to the eclipse of 1900 afforded reasonable assurance that fair skies might be expected in the Southern States at the moment of the event. But preliminary observations along the path of the forthcoming eclipse give no such promise. After studying these reports, however, it becomes apparent that the chances for an unobstructed view are about even at Padang, Sumatra; and for this reason a majority of the expeditions have located at this point. But for convenience, and through other causes, a smaller number have settled elsewhere at different points along the path of totality. Therefore, should some fail, there may be others outside the zone of obscurity who will succeed in all their endeavors.

The attention of all these expeditions will be chiefly directed toward the study of the sun's corona, and, aside from this, in a renewed search for the hypothetical intra-Mercurial planet, Vulcan. Simply described, the corona is the brilliant appendage of the solar body. It is the most vivid feature of an eclipse, and is visible to the eye only during such a phenomenon. Concerning its character there are many theories, but beyond the plane of theorizing little indeed is known. Layman and astronomer are entitled to guess its nature, but that is all. Some scientists incline to the belief that it results from electrical influence; others that its origin is magnetic activity. Still another theory is that the appearance results from fine matter ejected with great violence from the body of the sun; some assume that it is due to meteoric dust falling upon the orb. Still further, it is asserted that the corona is largely an optical effect, while another class contends that it is an indeterminable radiant matter streaming off into space. Of these, you may take your choice.

In appearance, the corona and its extensions are vivid, brilliantly beautiful, and in a way like the conventional aurora borealis, although, of course, of distinctly different form. At certain periods, the phenomenon assumes one characteristic shape; at other

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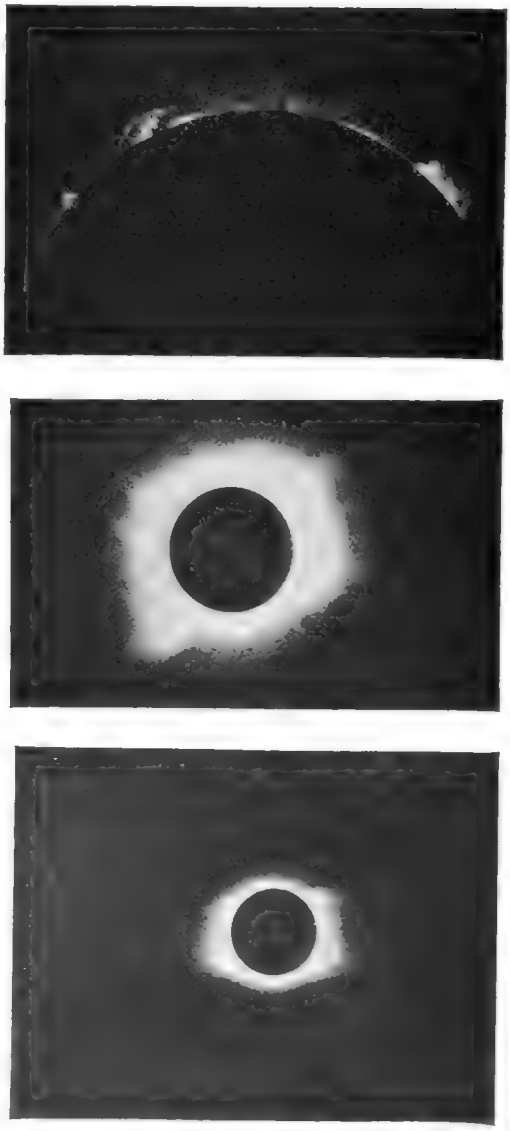
periods, another. Whatever its nature or origin, it is still certain that it is actively influenced by the condition of the body of the sun. Close observation of many eclipses has clearly demonstrated this fact. During regular and recurring periods of eleven years, the corona and the sun's spots, protuberances, and distended faculæ pass through well-defined changes. Furthermore, it has been found that the earth's magnetic and electrical conditions, as well as terrestrial weather effects, closely synchronize with visible solar manifestations. Here is the most interesting yet most perplexing problem in the study of the sun; and within this is bound up knowledge that may some day open wide an ample page of inestimable benefit to man. What bonds there are between earth and sun, aside from the matter of light and heat, may some time clearly be learned, and the probability that periodic variations of the weather are due to these solar influences is something that will be of vast value to understand. Divining, as it is vulgarly understood, is merely the duping of fools by charlatans. But what if divining be put upon the plane of science? Today, Sir Norman Lockyer, the British astronomer, has practically demonstrated that certain world changes are simultaneous with certain solar activities. By simple processes, he is able virtually to forecast the famine and the flood. His deductions are strong and clear; and by no means is any condition taken for granted. Some time ago, he was led into this study by noting the coincidence that sun-spot maximum and sun-spot minimum—intervals of greatest and least activity in the solar body—were accompanied by corresponding differences in the Indian rainfall. A scrutiny of the Famine Commission reports for the last half century showed him that the famines that have devastated India during that period have occurred in the intervals between these two pulses of rainfall. In addition, extreme low water in the Nile has occurred at the same periods.

The relation between the condition of the sun and the form of the corona is well understood. At sun-spot maximum, when the sun is at its most intense ebullition, the coronal rays radiate in disorder about the periphery of the orb. At sun-spot minimum, when the sun is at a quiescent stage, the polar rifts are clearly defined and the streamers parallel to the equator project to



FROM PHOTOGRAPHS SHOWING THE EXTENSION AND INNER DETAILS OF THE SUN'S CORONA.

extraordinary distances at right angles to the solar axis. At this stage, the corona develops its most singular and inspiring beauty and brilliancy. Some of these streaming banners of light may be 3,000,000 and even 4,000,000 miles in length; in 1898 the coronal extensions projected from the rim of the sun a distance, approximately, of 5,000,000 miles. This, however, was unusual.

The recurring form of the corona during these eleven-year periods has been so closely studied that to-day astronomers are able to

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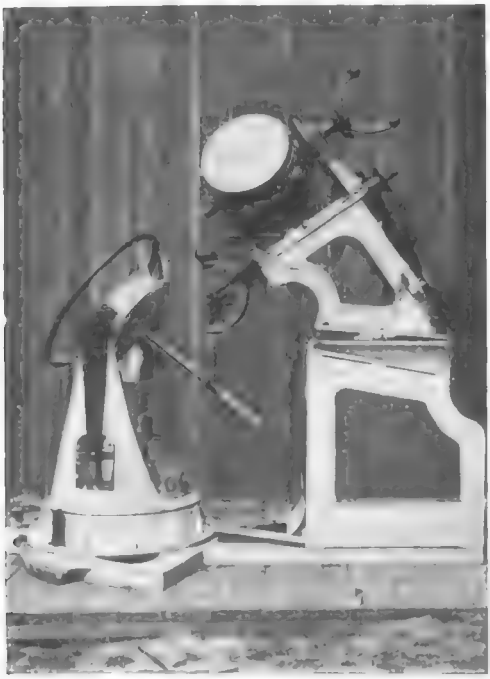
ONE HUNDRED AND THIRTY-FIVE FOOT SMITHSONIAN CAMERA, AT WADESBORO, NORTH CAROLINA, MAY, 1900.



SIDEROSTAT, WADESBORO, NORTH CAROLINA.

forecast the probable appearance of an impending eclipse. Such forecasts made prior to the eclipse of 1900 were remarkably exact, and one drawing, in particular, was almost identical with the shape and direction of the coronal streamers. But aside from being a demonstration of study and knowledge of eclipse conditions, these pencillings are of little practical interest.

Two other phenomena incident to a total eclipse of the sun are the solar prominences and the so-called Baily's Beads. These prominences, otherwise known as Red Flames, are of singular magnificence and intensity, and are due to terrific outbursts of hydrogen gas from the chromosphere or envelope of the sun. Their appearance is not restricted to moments of an eclipse, but may be seen at other times when suitably sought. Baily's Beads, which appear almost simultaneously with the prominences at a solar eclipse, derive their name from Mr. Francis Baily, who in 1836 first thoroughly described them. They appear just before the second contact, or beginning of totality, and are also sometimes seen after the

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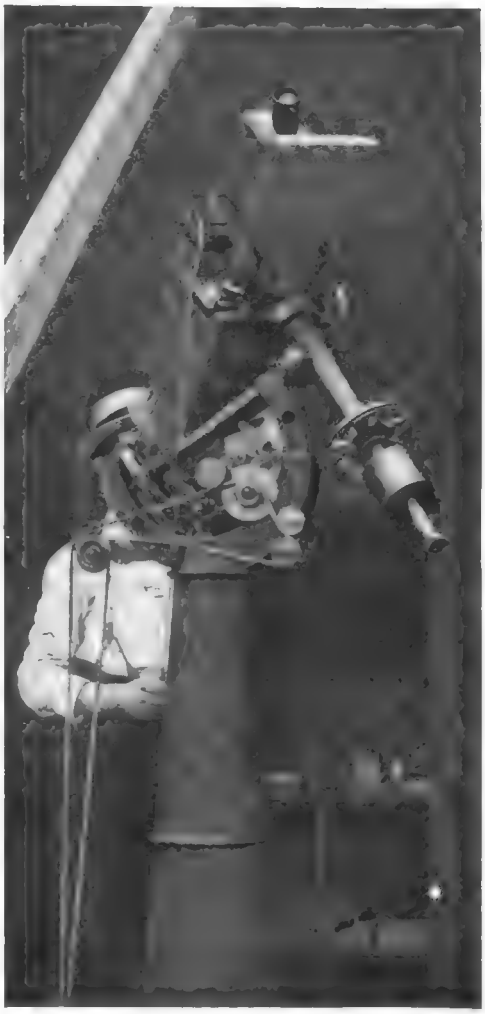
total phase has passed. The common explanation of their character is that they are portions of the sun's body seen between the serrations of the lunar mountains, but this theory, like other information upon eclipse phenomena, is more or less doubtful.

The intra-Mercurial planet before mentioned is a matter that has received a vast attention during eclipse observations of recent years. In 1859, Lescarbault proclaimed that during the total eclipse of that year he had discovered the celestial wanderer, and forthwith applied to it the name of Vulcan. But all efforts to confirm this problematic discovery have failed, although at every eclipse separate and special instruments have been directed in a searching scrutiny through all the celestial regions in which it could possibly exist, barring, of course, that space blotted out by the body of the sun. Whether there is, indeed, any unknown planet revolving about the sun is still speculation only, and at the forthcoming eclipse one more effort will be made to reduce the question to a fact. At Wadesboro, N. C., last May, a special battery of photographic instruments, fitted with lenses of extreme power, recorded all the heaven about the sun, but without result whatever, and this exhaustive and fruitless result was accepted as final by the sceptics.

Instruments for the observation of a solar eclipse are divided into two classes—visual and photographic. In each, lenses of an extreme focal length are required to produce the most satisfactory results. As the coronal light, at the best, is faint, it is not susceptible to magnifying without a dispersion of the rays, and thus a blurring of the details. For this reason, one cannot use a short telescope fitted with a magnifying eyepiece to enlarge the image by projection on a screen or photographic plate. So in order to obtain an image of large diameter, it is necessary to use lenses of great focal length. At Wadesboro, the Pickering lens of 135 feet focal length was used with excellent result, and in addition to this, the Yerkes expedition was supplied with another whose focal length was 61.5 feet. At Thomaston, Ga., where the Lick observatory was established, a 40-foot lens was used, and at Pinehurst, N. C., and Barnesville, Ga., others of equal size were installed.

The methods employed in obtaining the best results from these instruments were ingenious, and yet of the utmost simplicity. At Wadesboro the Pickering and Yerkes lenses were used in cameras laid parallel to the ground, and pointing away from the sun. Movable mirrors fixed upon cœlostats, driven by clockwork, projected the image



IN THE NAVAL OBSERVATORY, PINEHURST, NORTH CAROLINA.

through each lens, and as the mirrors counterbalanced the diurnal rotation, the image was kept fixed upon the photographic plate.

In conjunction with the large Pickering lens, one of 40-feet focal length was used by the Smithsonian observers. This instrument and others elsewhere of similar size were pointed directly at the sun, and to keep

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PROFESSOR YOUNG, PRINCETON CAMP AT WADESBORO, NORTH CAROLINA.

the image fixed the plate-holder, instead of a mirror, moved in harmony with the drift of the image.

All the fittings of the Yerkes camera, thanks to the thought of Prof. E. E. Barnard and his assistant, Mr. Ritchey, were of the most ingenious and unique character. As the duration of totality was brief, indeed, every second became precious, and to prevent waste of time meant, in a large measure, the success of the photographic work. In photographing the corona at other eclipses, the method usually employed was to use one plate-holder and to change the plates by hand. As this involved extreme care and deliberation, Mr. Ritchey suggested that the plates be fed automatically. To accomplish this, a light framework fifteen feet in length was built, and fitted with a train of ball-bearings. This was laid on a track at right angles to the axis of the camera, and was inclosed in a shed or plate-house 30 feet long. Seven plates—four in dimension 25 × 30 inches, and three 14 × 17 inches—were put in the plate-holder, side by side, and when one was exposed, the next was slid into position, a spring catch holding it in place during the exposure. A drop shutter, worked by a lanyard from the plate-house, opened and closed the aperture, and exposures were timed by a telegraph sounder which beat the seconds and was in connection, electrically, with Washington. With this and the other large cameras, exposures of different duration were made—short ones to bring out the brighter details near the body of the sun, and longer exposures to obtain the full limit of the coronal extensions. To obtain still other details of the form of the corona, a number of smaller and specially constructed lenses were also used.

Extensive preparations were made before the eclipse of last May for bolometric experiments to measure the heat radiation from the bright and dark parts of the corona. The instrument in use was of excessive delicacy, and to insure its correctness it was necessary to obviate the smallest de-

TELEGRAPHING MACHINE ON 135-FOOT SMITHSONIAN CAMERA.

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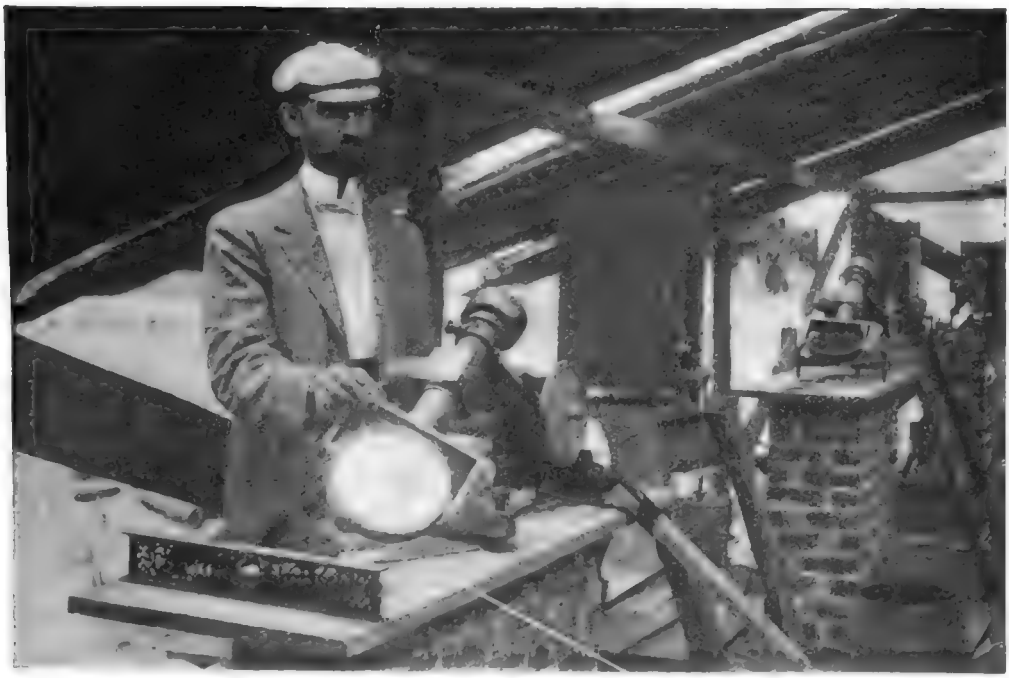

PROFESSOR EICHELBERGER AT PINEHURST, NORTH CAROLINA.

PROFESSORS CAMPBELL AND PERRINE AT THOMASTON, GEORGIA, WHERE THE LICK OBSERVATORY WAS ESTABLISHED.

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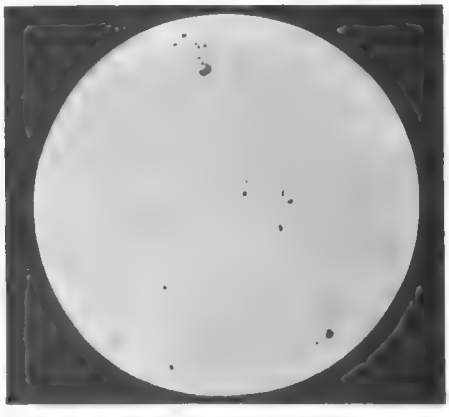
FORTY-FOOT CAMERA, BARNESVILLE, GEORGIA.

gree of vibration once it was adjusted. An instant before second contact, the instrument was in the most delicate adjustment, but precisely at the critical moment a light wooden beam, standing against the wall of the room, was overturned, and the accompanying jar threw the entire instrument out of gear. Before it could be readjusted, the flash at third contact came, and weeks of preparation and toil ended virtually in a failure. This misfortune, however, was the only one that clouded the work of the Wadesboro expeditions, and it is sincerely to be hoped that there will be even better success at the forthcoming eclipse observations.



FROM A PHOTOGRAPH OF SUN-SPOTS.

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ON THE STROKE OF NINE.

A WOLF STORY.

By Charles Major.

Author of "When Knighthood was in Flower."

With Illustrations by Mary Baker-Baker.

LATE one afternoon—it was the day before Christmas—Balser and Jim were seated upon the extra backlog in the fireplace, "ciphering." Mrs. Brent was sitting in front of the fire in a rude, home-made rocking-chair, busily knitting while she rocked the baby's cradle with her foot, and softly sang the refrain of "Annie Laurie" for a lullaby. Snow had begun to fall at noon, and as the sun sank westward the north wind came in fitful gusts at first, and then in stronger blasts, till near the hour of four, when Boreas burst forth in the biting breath of the storm. How he howled and screamed down the chimney at his enemy, the fire! And how the fire crackled and spluttered and laughed in the face of his wrath, and burned all the brighter because of his raging! Don't tell me that a fire can't talk! A fire upon a happy hearth is the sweetest conversationalist on earth, and Boreas might blow his lungs out ere he could stop the words of cheer, and health, and love, and happiness which the fire spoke to Jim and Balser nd their mother in the gloaming of that cold and stormy day.

"Put on more wood," said the mother in a whisper, not to awaken baby. "Your father will soon be home from Brookville, and we must make the house good and warm for him. I hope he will come early. It would be dreadful for him to be caught far away from home in such a storm as we shall have to-night."

Mr. Brent had gone to Brookville several days before with wheat and pelts for market, and was expected home that evening. Balser wanted to go with his father, but the manly little fellow had given up his ardent wish, and had remained at home that he might take care of his mother, Jim, and the baby.

Balser quietly placed a few large hickory sticks upon the fire, and then whispered to Jim:

"Let's go out and feed the stock and fix them for the night."

So the boys went to the barnyard to feed the horses and cows. They drove the sheep into the shed, and carried fodder from the huge stack, placing it against the north sides of the barn and shed, to keep the wind from blowing through the cracks and to exclude the snow. When the stock was comfortable, cosey, and warm, the boys milked the cows and brought to the house four buckets full of steaming milk, which they strained and left in the kitchen, rather than in the milk-house, that it might not freeze over night.

Darkness came on rapidly, and Mrs. Brent grew more and more anxious for her husband's return. Fearing that he might be late, she postponed supper until Jim's ever-ready appetite began to cry aloud for satisfaction, and Balser intimated that he, too, might be induced to eat. So their mother leisurely went to work to get supper while the baby was left sleeping before the cheery, talkative fire in the front room.

A venison steak broiled upon hickory coals, eggs fried in the sweetest of lard, milk steaming hot from the cows, corn-cakes floating in maple syrup and yellow butter, sweet potatoes roasted in hot ashes, and a great slice of mince pie furnished a supper that makes one hungry to think about. The boys were hungry without thinking, and it would have done your heart good to see that supper disappear.

As they sat at the table they would pause in their eating and listen attentively to every noise made by the creaking of the trees or the falling of a broken twig, hoping that it was the step of the father. But the supper was finished all too soon, and the storm continued to increase in its fury; the snow fell thicker and the cold grew fiercer, still Mr. Brent did not come.

Mrs. Brent said nothing, but as the hours

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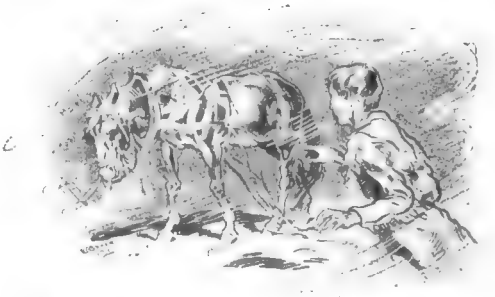
flew by her anxious heart imparted its trouble to Balser, and he began to fear for his father's safety. The little clock upon the rude shelf above the fireplace hoarsely and slowly drawled out the hour of seven, then eight, and then nine. That was a very late hour for the Brent family to be out of bed, and nothing short of the anxiety they felt could have kept them awake. Jim, of course, had long since fallen asleep, and lay upon a soft bearskin in front of the fire, wholly unconscious of storms or troubles of any sort. Mrs. Brent sat watching and waiting while Jim and the baby slept, and to her anxious heart it seemed that the seconds lengthened into minutes and the minutes into hours by reason of her loneliness. While she rocked beside the baby's cradle Balser was sitting in his favorite place upon the backlog next to the fire. He had been reading, or trying to read, "The Pilgrim's Progress," but visions of his father and the team lost in the trackless forest, facing death by freezing, to say nothing of wolves that prowled the woods in packs of hundreds upon such a night as that, continually came between his eyes and the page, and blurred the words until they held no meaning. Gradually drowsiness stole over him, too, and just as the slow-going clock began deliberately to strike the hour of nine his head fell back into a little corner made by projecting logs in the wall of the fireplace, and, like Jim, he forgot his troubles as he slept.

Balser did not know how long he had been sleeping when the neighing of a horse was heard. Mrs. Brent hastened to the door, but when she opened it, instead of her husband she found one of the horses, an intelligent, raw-boned animal named Buck, standing near the house. Balser heard his mother call, and quickly ran out of doors to the horse. The harness was broken, and dragging upon the ground behind the horse were small portions of the wreck of the wagon. Poor Buck's flank was red with blood, and his legs showed all too plainly the marks of deadly conflict with a savage, hungry foe. The wreck of the wagon, the broken harness, the wounds upon the horse told eloquently as if spoken in words the story of the night. Wolves had attacked Balser's father, and Buck had come home to give the alarm.



"BUCK HAD COME HOME TO GIVE THE ALARM."

Balser ran to the fire pile upon the hill and kindled it for the purpose of calling help from the neighbors. Then he went back to the house and took down his gun. He tied a bundle of torches over his shoulder, lighted one, and started out in the blinding, freezing storm to help his father, if possible.

He followed the tracks of the horse, which with the aid of a torch were easily discernible in the deep snow, and soon was far into the forest, intent upon his mission of rescue.

After the boy had travelled for an hour he heard the howling of wolves, and hastened in the direction whence the sound came, feeling in his heart that he would find his father surrounded by a ferocious pack.

Soon he reached the top of a hill overlooking a narrow ravine which lay to the eastward. The moon had risen and the snow had ceased to fall. The wind was blowing a fiercer gale than ever, and had broken rifts in the black bank of snow-cloud, so that gleams of the moon now and then enabled Balser's vision to penetrate the darkness. Upon looking down into the ravine he beheld his father standing in the wagon, holding in his hand a single-tree, which he used as a weapon of defence. The wolves jumped upon the wagon in twos and threes, and when beaten off by Mr. Brent would crowd around the wheels and howl to get their courage up, and renew the attack.

Mr. Brent saw the boy starting down hill toward the wagon, and warned him to go back. Balser quickly perceived that it would be worse than madness to go to his father. The wolves would at once turn their attack upon him, and his father would be compelled to abandon his advantageous position in the wagon and go to his relief, in which case both father and son would be lost. Should Balser fire

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into the pack of wolves from where he stood he would bring upon himself and his father the same disaster. He felt his helplessness grievously, but his quick wit came to his assistance. He looked about him for a tree which he could climb, and soon found one. At first he hesitated to make use of the tree, for it was dead and apparently rotten, but there was no other at hand, so he hastily climbed it and seated himself firmly upon a limb which seemed strong enough to sustain his weight.

"FOLLOWED THE TRACKS OF THE HORSE."

Balser was now safe from the wolves and at a distance of not more than twenty yards from his father. There he waited until the clouds for a moment permitted the full light of the moon to rest upon the scene, and then he took deliberate aim and fired into the pack of howling wolves. A sharp yelp answered his shot, and then a black, seething mass of growling, fighting, snapping beasts fell upon the carcass of the wolf that Balser's shot had killed, and in less time than it takes me to tell you about it they devoured their unfortunate companion.

Balser felt that if he could kill enough wolves to satisfy the hunger of the living ones they would abandon their attack upon his father, for wolves, like cowardly men, are brave only in desperation. They will attack neither man nor animal except when driven to do so by hunger.

After Balser had killed the wolf, clouds obscured the moon before he could make another shot. He feared to fire in the dark lest he might kill his father, so he waited impatiently for the light, which did not come.

Meanwhile, the dead wolf having been devoured, the pack again turned upon Mr. Brent, and Balser could hear his father's voice and the clanking of the iron upon the single-tree as he struck the wolves to ward them off.

It seemed to Balser that the moon had gone under the clouds never to appear again. Mr. Brent continually called loudly to the wolves, for the human voice is an awesome sound even to the fiercest animals. To Balser the tone of his father's voice, mingled with the howling of wolves, was a note of desperation that almost drove him frantic. The wind increased in fury every moment, and Balser felt the cold piercing to the marrow of his bones. He had waited it seemed to him hours for the light of the moon again to shine, but the clouds appeared to grow deeper and the darkness more dense.

While Balser was vainly endeavoring to watch the conflict at the wagon, he heard a noise at the root of the tree in which he had taken refuge, and looking down he discovered a black monster standing quietly beneath him. It was a bear that had been attracted to the scene of battle by the noise. Balser at once thought, "Could I kill this huge bear his great carcass certainly would satisfy the hunger of the wolves that surround my father." Accordingly he lowered the point of his gun, and, taking as good aim as the darkness would permit, fired upon the bear. The bear gave forth a frightful growl of rage and pain, and as it did so its companion, a beast of enormous size, came running up, apparently for the purpose of rendering assistance.

Balser hastily reloaded his gun and prepared to shoot the other bear. This he soon did, and while the wolves howled about his father the two wounded bears at the foot of the tree made night hideous with their ravings.

Such a frightful bedlam of noises had never before been heard.

Balser was again loading his gun, hoping to finish the bears, when he saw two lighted torches approaching along the path over which he had just come, and as they came into view, imagine his consternation when he recognized the forms of Liney Fox and her brother Tom. Tom carried his father's gun, for Mr. Fox had gone to Brookville, and Liney, in addition to her torch, carried Tom's hatchet. Liney and Tom were ap-

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proaching rapidly, and Balser called out to them to stop. They did not hear him, or did not heed him, but continued to go forward to their death. The bears at the foot of the tree were wounded, and would be more dangerous than even the pack of wolves howling at the wagon.

"Go back! Go back!" cried Balser desperately, "or you'll be killed. Two wounded bears are at the root of the tree I'm in, and a hundred wolves are howling in the hollow just below me. Run for your lives! Run! You'll be torn in pieces if you come here."

The boy and girl did not stop, but continued to walk rapidly toward the spot from which they had heard Balser call. The clouds had drifted away from the moon, and now that the light was of little use to Balser (for he was intent upon saving Liney and Tom) there was plenty of it.

The sound of his voice and the growling of the bears had attracted the attention of the wolves. They were wavering in their attack upon Mr. Brent, and evidently had half a notion to fall upon the bears that Balser had wounded. Meantime Liney and Tom continued to approach, and their torches, which under ordinary circumstances would have frightened the animals away, attracted the attention of the bears and the wolves and drew the beasts upon them. They were now within a few yards of certain death, and again Balser in agony cried out: "Go back, Liney! Go back! Run for your lives!" In his eagerness he rose to his feet and took a step or two out upon the rotten limb on which he had been seated. As he called to Liney and Tom and motioned to them frantically to go back, the limb upon which he was standing broke, and he fell a distance of ten or twelve feet to the ground, and lay half stunned between the two wounded bears. Just as Balser fell Liney and Tom came up to the rotten tree, and at the same time the pack of wolves abandoned their attack upon Mr. Brent and rushed like a herd of demons upon the three helpless children.

One of the bears immediately seized Balser, and the other one struck Liney a fearful blow with its horny paw and felled her to the ground. By the light of the torches Mr. Brent saw all that happened, and when the wolves abandoned their attack upon him he hurried forward to rescue Balser, Liney, and Tom, although in so doing he was going to meet his death. In a few seconds

"'GO BACK! GO BACK!' CRIED BALSER, . . . 'OR YOU'LL BE KILLED.'"

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"THE LIMB UPON WHICH HE WAS STANDING BROKE, AND HE FELL . . . AND LAY HALF STUNNED BETWEEN THE TWO WOUNDED BEARS."

Mr. Brent was in the midst of the terrible fight, and a dozen wolves sprang upon him. Tom's gun was useless, so he snatched the hatchet from Liney, who was lying prostrate under one of the bears, and tried to rescue her from its jaws. Had he done so, however, it would have been only to save her for the wolves. But his attempt to rescue Liney was quickly brought to an end. The wolves sprang upon Tom, and soon he, too, was upon the ground. The torches, which had fallen from the hands of Tom and Liney, continued to burn and cast a lurid light upon the terrible scene.

Consciousness soon returned to Balser, and he saw with horror the fate that was in store for his father, his friends, and himself. Despair took possession of his soul, and he knew that the lamp of life would soon be black in all of them forever. While his father and Tom lay upon the ground at the mercy of the wolves, and while Liney was lying within arm's reach of him in the jaws of the wounded bear, and he utterly helpless to save the girl of whom he was so fond, Balser's mother shook him by the shoulder, and said, "Balser, your father is coming." And Balser sprang to his feet, looked dazed for a moment, and ran half-weeping, half-laughing, into his father's arms just as the sleepy little clock had finished striking nine.

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VICISSITUDES OF THE WHEEL.

By Eleanor Hoyt.

THE bicycle is not dead—not by any means. It is merely a reformed character, and is steadily regaining favor with the better part of the community. It has turned from the husks and gone humbly back to veal and respectability.

There is an excellent parable in the story of the wheel; and he who runs may read, unless he is scorching too vigorously to have time for literature. The bicycle's history is so essentially and profoundly human. It reflects century-lamp side-lights upon the ways of men, women, and society. It points a moral. Incidentally, it points an immoral.

Probably no one, not even the oldest inhabitant, remembers from what quarter of the horizon the bicycle dawned upon New York. It came unheralded; but from the start it had its circle of admirers—venturesome, hardy souls, who welcomed it, as they would have welcomed a new English lord, a new long-haired erotic poet, a new beauty, a new Western multi-millionaire. There is a social contingent with whom novelty always succeeds.

The fact that the bicycle had but two wheels, when the public was used to four wheels, or at least three, was a guarantee of a certain degree of popularity.

Famous men have built great reputations upon eccentricities slighter than that.

The primitive high-wheel was what might be called a difficult individual. This candidate for social honors did not cringe, was not even easily moved and won. It disarmed aristocratic prejudice against presuming strangers by being more exclusive than the most exclusive. It refused to truckle even to the bluest of blood or the longest purse. It would throw a scion of the oldest Knickerbocker family into a mud hole as nonchalantly as though he were the veriest street arab. It refused to be cajoled into amiability by even the fairest society belle. It was haughty, expensive, dangerous, conspicuous. To be seen in its company became a badge of distinction, and a ride down Fifth Avenue upon a high-wheel was more to be desired than a walk down the same avenue with the most recently imported flower of foreign nobility.

Of course social popularity for the stranger who played his cards so well was a foregone conclusion. Society *en masse* seldom calls a bluff. The pioneers who first flocked to the newcomer's standard were later elbowed aside in the rush. The wheel was taken up by the smart set, and the *hoi polloi*, as always, followed the view-halloo of the four hundred. It was launched upon the social vortex. It changed to suit new conditions. Its provincialism and eccentricity disappeared. They had served their purpose. Its aggressiveness was toned down and its rough edges smoothed. It took on the well-groomed inconspicuousness of the prosperous Wall Street man, and settled into luxury as though to the manner born. It developed rubber tires and pneumatic saddles, and adopted a brake, to avoid an inelegant necessity of vigorous back-pedalling.

These metamorphoses occur frequently in New York, but no Ovid chronicles them.

The fiery, untamed stranger bowed to the dictum of a society in which self-repression is the first and great commandment, and cultivated good form, at the cost of individuality, as many a lion had done before it. A child could play with it in his new safety phase. Still its popularity waxed, and with it its self-conceit.

"Verily," said the bicycle, "I am the whole thing. Society lives but in my smile. I am arbiter of the social destiny of maidens. Through me only can the summer man star triumphantly. I have subdued the chaperon, and toppled her from her throne. I have improved the country roads. I have given a black eye to the oft-sung horse, who is a slow and awkwardly constructed beast at best, and never deserved his reputation. Children cry for me. Old age cannot endure life without me. I am Alpha and Omega. In fact, to quote the gentleman whom I occasionally see upon the billboards, 'The world is mine.'"

The instructive biography of Beau Brummel, and the sage remarks which William Shakespeare put into the mouth of one

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Wolsey, who was himself something of a high roller in his day, would have made excellent reading for the bicycle at this stage of its career, but a kind Providence did not throw the volumes in the social lion's way, and no influence checked his inflation. In fact, it was about this time that improved foot-pumps were invented to help on its inflation.

The wheel was the rage. Men forsook sweethearts and wives to follow the charmer. Women neglected children and homes to swell the ranks of its devotees. Its name was on all lips. Its praises were sung wherever the race congregated. Men fought, bled, and died to establish the claims to superiority of their favorite saddles. Women turned from their dearest friends because of differences of opinion regarding the length of wheeling skirts. The English language was shaken to its foundation and readjusted to do the celebrity honor.

Naturally, all this went to the wheel's head. What could one expect save that? History is rich in illustrations of this same natural sequence. Individuals, nations—it is the same with all. Much fame and power drive them to folly.

The bicycle began to show a leaning toward effeminate luxury and caprice. It went in for silver mountings. It came out in radiant colors. It wore eccentric brakes and decorated itself with ribbons and cyclometers and watches and other trinkets. All that might have been forgiven, but its morals weakened though its frame grew strong, and it began to strike a pace that was beyond the limits of discretion. In the best circles it was rumored that the bicycle had been seen in company with persons who were not—well, who were not people one could know.

It was undoubtedly becoming faster every day, and as time went on it began perceptibly to run madly down-hill. At last it threw restraint to the winds and gave up brakes altogether. All weight was irksome to it, for its one aim was to attain speed, and it went the pace that killed. Sometimes it killed its rider also, sometimes the unlucky mortal who happened to be crossing the street.

For a time the bicycle's social prestige stood the strain of its reckless dissipation. Every one understood that it was fast; but speed doesn't necessarily exclude an object of devotion from the best social circle, if it retains sufficient discretion not to flaunt its misdoings in society's face. A few Puritanic censors snubbed it. An occasional chaperon forbade her *débutantes* to be seen with it. Some one-time hospitable doors were closed to it. But, in the pride of its youth and self-confidence, the wheel refused to be warned by these straws that marked the ebb tide. It was firmly convinced that, like the king, it could do no wrong, and that society could not drop it, because society could not exist without it.

So it sowed its wild oats with lavish prodigality, and disregarded the frowns of Dame Grundy. It became a sporting character, going in for century runs and professional races and constantly cheapening itself. It went out with wildly yelling bicycle clubs clad in sweaters that shrieked to heaven, and making Sunday a day of horror to the quiet and orderly part of the community. It appeared on Riverside Drive with notoriously gay soubrettes, and dined at the Claremont not wisely but too well—going home, later, on its back, in a hansom cab, with its (w)heels sticking out over the dash-board. It scorched down the Coney Island cycle-path with bloomer-clad shop-girls, and was to be seen leaning against the railings of notorious road-houses in close communion with bartenders. It passed its old friends in their smart traps, as it was whirling Bronxward for Sunday dinner, in company with gum-chewing, strident-voiced hoodlums, and the friends looked the other way. The hours that it kept were enough to shock a Knickerbocker Club man. It was outside the pale, and respectable society could not spread its mantle of clemency broadly enough to cover this black sheep.

The good women were the first to cut it. It is always that way; but in defence of feminine charity, it may be said that the women are usually acting under orders from the men folk of their families. Personally, a man has no objection to another man because he is a sad dog; but there is one law for a male, and another for his wife or sister—both laws being formulated in the master masculine brain.

So the women of the best society dropped the wheel.

They still talked about it behind closed doors and with elevated eyebrows. Their husbands had told them such tales; and then they had seen— Oh, well, one could see enough circumstantial evidence to hang the

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accused any time one chose to go out upon the streets. The husbands and brothers still maintained speaking relations with the *roué*. They even went with it on some of its reckless outings, and laughed at its misdoings; but they no longer courted it. They only patronized it. They were not putting it up at their clubs, taking it into their homes, turning their servants over to it, pressing compliments and gifts upon it, seeking its companionship early and late.

The wheel felt the difference and resented it; but the attitude of the conventional world only embittered it and drove it to worse excesses. Every man bitterly blames a society from which he has deliberately cut himself off. At last the pace began to tell upon the bicycle that had gone wrong. It showed the wear and tear and grew careless of its dress. There were times when it shone with all its old glory. More often it was a tarnished and seedy ghost of its early self. Then even its disreputable friends began to drop away from it. The blonde soubrette went off with an automobile, and the shop-girl coolly passed it by on the arm of a bright plaid golf-bag. The iron entered into the soul of the discarded idol, and it learned, in bitterness, that the philosophers were not such duffers as the casual observer might believe. It grew rusty and misanthropic, and didn't even care to wash. It lodged in gloomy basements and tenement halls and boarding-house cellars; and, punctured in tire and spirit, leaned wearily against tumble-down sheds and cursed its folly.

But the very completeness of its ruin was its salvation. Some sinners must touch bottom before they get a rebound. When its demoralizing following left it alone, the wheel had time for reflection and good resolutions, and saw the error of its ways. There was nothing in it now to attract false sycophants; but a few friends of better days, who had watched its descent to Avernus, more in sorrow than in anger, had stood by, and it turned to them.

After all, the world is not hard upon prodigal sons. In the case of a prodigal daughter—but, as our friend Kipling would say, that's another story.

The bicycle pulled itself together and looked for honest work. It found it. There were scores of men and women living at a distance from their work who were willing to give it employment. It proved steady and faithful. Those old and prosperous friends who had kept track of it watched it now, and approved. There was a chastened and subdued wheel that had turned over a new leaf, and was trying to lead the strenuous life. A good fellow, too, a jolly friend. Of course it has been a bit wild, but look at so-and-so and such-and-such. They had had their fling, and who thought the worse of them for it?

So when these men met the social outcast, they spoke it fair, and once more invited it to the club. Then they talked to their women folk and told them that the bicycle showed a broken and contrite spirit, and was leading a respectable life; and woman, who loves a sinner amenable to gentle influence, and who would rather be under-study to erring man's guardian angel than star in any other *rôle*, smiled mistily through sympathetic eyes, and said, "Do bring the poor fellow to dinner."

So the wheel came back to its own, and charitable friends ignored the interregnum and held out the right hand of fellowship to it. It has sowed its wild oats, and travelled far and wide for the sowing, but those days are past. Against an occasional lapse from grace it may not be proof, but as a steady thing, it is again a dweller in the camps of the Philistines. It is the friend of the family, has comfortable quarters in city homes, and is an indispensable adjunct of country life. It isn't a fad to-day, doesn't dominate society, but leads a useful and comfortable existence in the odor of respectability, and this summer promises to give it a standing that it has not had in the last few years.

Swell ladies' tailors tell that for the first time in several years their patrons are ordering generous wheeling outfits with their summer wardrobes. Certain exclusive country clubs are seeing fit to enlarge their bicycle quarters. Evidently the ravens who croaked bicycle obituaries were yellow newsmongers. The wheel is, if one has a catholic taste in metaphors, rising from its ashes.

Possibly there are moments when it dreams of *les beaux jours* in Vagabondia, but it has no regrets. It looks, with friendly pity, at the automobile, for it knows that history will repeat itself, and that the making of social incident is painful work, even when the story ends, as it does, with reinstatement in the good graces of society's better half.

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THE STUDY OF CHILDREN

INTERESTING RESULTS OBTAINED BY THE INVESTIGATION OF LARGE NUMBERS OF CHILDREN—RELATION OF MENTAL AND PHYSICAL POWERS TO BIRTH, SEX, AND NATIONALITY—VALUABLE LESSONS FOR ALL PARENTS AND TEACHERS.

By Arthur MacDonald,

Author of "Experimental Study of Children," "Abnormal Man," etc.

Washington, D. C.

IT has been said the most important study of man is man. It may be added, the most important period of man's life to investigate is childhood. Children are easy to approach, their natures are open, and if anything wrong is found, it may be remedied much better than later in life.

Children can be studied more scientifically than adults; they are nearer to nature, and have been less influenced by the evils of the world.

While the study of children received its first impulse from Europe, it is in America that it has been developed to the greatest extent. In many of our cities, school children have been measured both physically and mentally, and child-study associations have been formed in different parts of the country. While Europe regards us as a young nation, and accords us little in intellectual and scientific development, it is nevertheless probable that the study of children will first become a *science* in our country.

NATURAL CRITICISMS.

THERE have been some criticisms of the study of children, but this always occurs in any new line of work, where mistakes are liable to be made, no matter how worthy the work may be. Such mistakes are usually due either to lack of experience or enthusiasm. But there can be no success in anything new without enthusiasm. Honest criticism should be welcomed in all lines of inquiry, for it serves as a rudder, and may save the investigation from disaster. There can be no progress without pain.

It would be premature to make conclusions as to the benefit of some of the investigations in the domain of child study. It is a wise person who could tell in advance in new lines of work what may be valuable and what may not. There is such a thing as being too *practical* in our requirements of experimental work. Sometimes it is expected that the results of an investigation should be for immediate use. But this commercial or utilitarian spirit does not yield the best results, though it may bring quick returns. In early stages of all inquiries much may be done that subsequently is seen to have been unnecessary, for the real meaning of any new truth cannot always be known until the discovery of other truths has been made. Many details in scientific research often make us impatient, but in all investigations it is better to have too many data than too few. A laboratory inquiry may be pursued a very long time and the result of all the labor be stated in one sentence, or the conclusion may be only negative; but this is no reason that the investigation should not have been undertaken, for it is often

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important to know that a thing is not true, and sometimes it is the only way to learn what methods and material to avoid. These and like objections would have applied to all sciences in their early stages. A child necessarily totters and falls before it learns to walk. It will not be long before the study of children will be considered one of the most necessary and important movements for the good of mankind.

WASHINGTON CHILDREN.

TO illustrate some recent lines of work, we give a table and number of conclusions based upon a study of Washington school children.

The table shows results of an investigation of 20,000 children by the writer, and indicates some relations between mental ability, sex, nationality, sociological condition, abnormalities and defects, as reported by the teachers. It is evident that had specialists examined the pupils, the per cent. of abnormalities and defects would have been much greater. But the purpose was to give simply the more obvious peculiarities and defects which any intelligent teacher by constant contact with a pupil would note.

TABLE: MENTAL ABILITY IN RELATION TO SEX, NATIONALITY, SOCIOLOGICAL CONDITIONS, ABNORMALITIES AND DEFECTS, OF 20,000 WASHINGTON SCHOOL CHILDREN, AS REPORTED BY THE TEACHERS.

	Bright	Dull.	Average.	Sickly.	Nervous.	Defects in			Convulsions.	Lazy.	Unruly.
						Eyesight.	Hearing.	Speech.			
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
All Boys	39	16	45	5.25	1.20	1.21	.67	1.11	.06	1.33	5.47
All Girls	39	11	50	4.78	.67	1.27	.36	.28	.01	.22	.25
Boys, American parentage	38	15	47	5.48	1.28	1.36	.68	1.11	.08	1.48	5.63
Girls, " "	40	9	51	5.32	.80	1.52	.40	.34	.02	.23	.11
Boys, Foreign "	34	17	49	2.13	.19	.58	.19	.87	....	.58	4.44
Girls, " "	32	16	52	2.60	.19	.38	.20	.....	....	.10	.96
Boys, Amer. & foreign parentage	32	16	52	7.17	1.79	1.57	1.12	1.34	....	1.23	5.60
Girls, " " "	38	14	48	3.53	.29	.59	.20	.20	....	.29	.39
Boys, Laboring classes	31	17	52	3.72	.51	.77	.44	.77	.04	1.09	4.42
Girls, " "	32	16	52	6.47	.86	1.46	.57	.57	....	.19	.19
Boys, Non-laboring classes	44	11	45	7.37	2.03	1.97	.94	1.49	.13	1.91	7.05
Girls, " "	48	...	52	4.66	.83	1.73	.27	.14	.04	.29	.03

As the citizens of Washington come from all parts of the Union, the conclusions may have more general application to America as a whole.

Beginning with the first three columns of the table, we will mention a few points.

MENTAL ABILITY.

ALL boys and girls show the same percentage of brightness, but the girls have five per cent. less dulness, and so in general may be said to be a little brighter than the boys. But this may be due to the fact that girls reach maturity sooner than boys.

Children (boys and girls) of American parentage are brighter than both children of foreign parentage and children of foreign and American parentage. This seems to indicate that a mixture of nationalities is not always advantageous in its effect upon the offspring.

Children of the non-laboring (professional and mercantile) classes are superior to those of the laboring classes, indicating that the advantages of good social conditions are favorable to mental brightness.

SICKLINESS AND NERVOUSNESS.

BOYS of non-laboring classes show a much higher per cent. of sickliness and nervousness than boys of the laboring classes, indicating that easier social surroundings are not always conducive to health.

LAZINESS AND UNRULINESS.

WHILE most all children, boys especially, are lazy at times, there are neverthe-

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less a number of children who seem to be chronically lazy. From the table we see that the dull boys have the highest per cent. of laziness (2.97). It may be true also that their indolence is one of the causes of this dulness. Comparing all boys and girls, the boys (1.33) will be seen to be much more lazy than the girls (0.22).

While of course there is no standard of laziness, yet there are certain children whose excessive laziness is apparent to every teacher; this also is true in regard to unruly children. As we might expect, the boys (5.47) are very much more unruly than the girls (0.25).

OTHER DEFECTS AND ABNORMALITIES.

WITHOUT drawing further conclusions from the table, it is evident that boys in general show a much higher per cent. of defects than girls. Many reasons might be given, but it may be said that boys are exposed to more danger from accident and to more temptations than girls. This parallelism seems to appear in other forms; thus in prison and reformatories there are four or five of the male sex to one of the female sex. But it would seem that when there are defects in the female they are more significant and serious than in the male.

A general conclusion as to all children with abnormalities is, that they are inferior not only in mental ability, but in weight, height, and circumference of head to children in general.*

SENSIBILITY TO PAIN.†

AS pain is an important factor in life, we will illustrate how it is measured by an instrument called an algometer. The instrument, an illustration of which appears at the end of this paper, was designed by the writer, and is called a temporal algometer, because it is pressed against the temporal muscles,‡ to test the sense of pain. It consists of a brass cylinder *BF*, with a steel rod *C* running through one of the ends of the cylinder. This rod is attached to a spring, with a marker *E* on the scale *A*; this scale is graded from 0 to 4,000 grammes. The brass disk *D* is about three-quarters of an inch in diameter; a piece of flannel is glued to its surface, so as to exclude the feeling of the metal when pressed against the skin, thus giving a pure pressure sensation. The whole instrument is one foot in length.

In using this algometer, it is held in the right hand at *B*, by the experimenter (as shown in the illustration at the beginning of this article), who stands back of the subject and presses the disk *D* against the right temporal muscle, and then he moves in front of the subject, where he can conveniently press the disk against the left temporal muscle.

As soon as the subject feels the pressure to be in the *least disagreeable*, the amount of pressure is read by observing the marker *E* on the scale *A*. The subject sometimes hesitates to say just when the pressure becomes in the least disagreeable, but this is part of the experiment. The purpose is to approximate as near as possible to the threshold of pain. To make any general distinction between "disagreeable," "unpleasant," "uncomfortable," "least bit painful," etc., is difficult, if not dogmatic. Estimates of feeling are of course only approximate, and we have allowed fifty grammes as a margin for error.

This instrument measures approximately three things combined: the nerve, the feeling of pain, and the idea of pain. In our present state of knowledge it would be premature to say which of these three elements enters most into the measurement.

A common mistake is to think that the amount of pressure one can endure is desired, and owing to this misconception, objection has been made to using the instrument on children. But just the opposite is desired; when the pressure feels the *least* disagreeable or uncomfortable, the subject is to say so at once. In a large number of experiments, the writer has heard no child complain of being hurt; many desire to try again, to decide more exactly. Instead of being an instrument for causing pain, it may teach us more about the nature of pain and thereby help us to prevent or lessen pain.

The following conclusions are the result of experiments on different classes of children:

Sensibility to pain decreases with age.

Girls in private schools, who are generally of wealthier parents, are much more sensitive to pain than girls in the public schools.

* Based upon tables in "Experimental Study of Children," reprint from Report of Commissioner of Education for 1897-98, Washington, D. C.

† See paper (by writer) before the American Psychological Association. "Psychological Review," March, 1899.

‡ These muscles are preferred, because no trade or profession materially affects their volume; they are also conveniently located.

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It would appear that refinements and luxuries tend to increase sensitiveness to pain. The hardihood which the great majority must experience seems advantageous. The effect of hardihood is further seen from the fact that the children of the non-laboring classes are more sensitive to pain than those of the laboring classes. There seems to be no necessary relation between mental brightness and sensibility to pain.

Girls are more sensitive to pain than boys at all ages. This agrees with some previous experiments showing that women are more sensitive than men; but this does not necessarily refer to *endurance* of pain.

CIRCUMFERENCE OF HEAD.

THE writer found, with the Washington children, that as circumference of head increased mental ability increased. This conclusion is in accord with the general truth held by zoölogists, that in animals the relative size of brain to body is an index of intelligence. It was also found that as age increases in children, brightness decreases in most studies. In this connection it may be mentioned that the relative size of head to body in children is much greater than in adults.*

RECENT RESULTS OF MEASUREMENTS OF CHILDREN.

WE desire to consider some recent results of measurements of children in general. For most of these data we are indebted to American investigators. Some of the conclusions may seem somewhat fragmentary, but this is what one might expect in new fields of inquiry.

It may be as well to remark here as any place, that while most of the conclusions in this paper are based upon a considerable number of cases, they must be taken in a *general* sense only; that is, they are true in the majority of cases. Any assertion about human beings that is, so to speak, three-fourths true and one-fourth false, is valuable, for it is like much useful knowledge in the world which is only approximately true.

SUPERIORITY OF SOME CHILDREN.

IT has been found from a number of investigations in different parts of our country that children of well-to-do parents are taller and heavier for their age than children of poor parents. This is doubtless due to better food, air, and light enjoyed by those in comfortable circumstances.

Children of American-born parents are taller and heavier than those of other nationalities. One reason for this may be that American children are better adapted by heredity and education to their own country. This want of adaptability is illustrated by the belief that foreigners in a new country generally commit more crime relative to their number than natives.

A certain specialist found by percussion * that the liver of boys of the well-to-do classes was larger than in boys of the poorer classes.

It would seem that first-born children excel later-born children in height and weight. This may be due to the greater vigor of the mother at the birth of the first child. We are reminded of a fact, mentioned later, that out of fifty great men of this century, thirty per cent. were the youngest sons.

In England it was found that growth degenerates as we go lower in the social scale, there being a difference of even five inches in height between the best and worst fed classes in the community.

An investigation of 10,000 children in Switzerland showed that children born in summer are taller for their age than those born in winter; as a majority of children in the public schools are poor, in winter their parents are forced to economize more on account of expense of heating; their rooms are also liable to be small and poorly ventilated, while in summer they are out in the fresh air; food is also cheaper and more varied. The influence of unhealthy conditions on a very young child would be much greater than when it is older and better able to resist them.

It has been said that growth is regular, and any deviation from it tends to produce disease. Hence the importance of determining what regular growth is. A large head is frequently accompanied with a contracted chest; here mental action may be slow, probably from deficient supply of purified blood. One specialist has noted that boys with small frames and very large heads

* For further details, see "Experimental Study of Children."

* Tapping on the surface of the body in order to learn the condition of the part beneath, by the sounds produced.

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are liable to be deficient in repose of character.

ABNORMALLY SHAPED HEADS.

IT is a general instinctive belief in us all, that when we see an irregular or poorly shaped head, something must be wrong. It is true that some of the brightest people may have very poorly shaped heads, but these are exceptions to the general rule. The investigation of this question, though limited, indicates that our instinctive disfavor towards ill-shaped heads is not without some basis. It has been found that dull pupils have more irregularities in the head and face than pupils in general. This was ascertained by an experiment made on 400 schools boys, of whom ninety had abnormally shaped heads. They all were given simple figures to add at certain limited times, those who added the most and made the fewest mistakes were found to have the better shape heads. One must be very careful here not to make any general conclusion from an experiment upon a relatively small number. Yet the result indicates a probability; to determine its general truth would of course require investigation of a very much larger number of persons.

RIGHT-HANDEDNESS.

IT has been for a long time under discussion, whether it is not better to teach right-handed children to use their left hand more, the idea being to increase symmetry and uniformity in their development. This theory seems very plausible, but recent investigation tends to show that right-handedness is natural, and that its superiority over the left hand increases with growth, also that the brightest pupils are, so to speak, more right-handed than the others. This suggests the modern tendency to become expert in one thing rather than be upon the surface of many things. The left hand does best when it supplements or helps the right hand. It is a general opinion that criminals * have not only more left-handed people among them, but they are also more expert with both hands than people in general. Sometimes the finger muscles of the pickpocket are cut, so that he can apply either hand with greater dexterity.

* "Criminology" (by writer).

DANGER AT AGE OF PUBERTY.

IT has been found that girls from about twelve to fourteen years of age are both taller and heavier than boys, but at no other time; that is, they excel in average height and weight. This pubertal period is the time when girls are growing very fast, and so need most of their vitality to adapt themselves to new conditions of life. For this reason they should be free from care and work more than at other times; but we regret to say that both their home and school duties seem to be increased at this time, so that their health is often impaired if not undermined. Girls seem to have less power of endurance than boys at all ages. This is more marked at the time of puberty.

It is known also that during puberty the body grows in length at the cost of chest development, and the arteries increase also in length, but their diameter is relatively little increased, so that much more work is required of the heart. If now, by any unfavorable conditions, growth is hindered or made irregular, there may be danger of the early development of consumption. At this period, also, girls are most disposed to sickliness, ænemia, headache, and other ills.

UNFAVORABLE INFLUENCE OF CITY LIFE.

IT has been found that the average size of body during school years is less and growth is slower in the city than in the country. While city-bred children are usually more vivacious, they seem to have less power of endurance than children reared in the country. The pubertal period, however, comes earlier in the city, and the children are more advanced in a way, but this is regarded as a premature and unfavorable development. Country life and air are more adapted for overcoming any injurious effect of confinement in school.

DEFECTS OF SIGHT AND HEARING.

IN an examination of about 5,000 school children in Chicago, thirty-five per cent. were found to have defective eyesight; the defectiveness increases the most during the first three years of school life, and it seems to be due to faults in school conditions.

In the tests of hearing it was found that a large number of the pupils could hear with one ear better than the other. The impor-

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tance of seating such pupils on the side of the room where this best hearing ear will be towards the teacher is evident. Defects of sight and hearing are more numerous among the dull and backward pupils. In an investigation in another city, it was found that about fifty per cent. of the pupils had at least one eye defective in vision.

PHYSICAL EXAMINATION.

MOST of the studies on large numbers of children show that *in general* those inferior in body are also inferior in mind. When this bodily inferiority reaches a certain point, a physical examination should be made to determine if the pupil is strong enough to go on with his studies; for, however successful his mental education may be, if it is at the expense of his health, it will be of doubtful advantage.

This examination should extend not only to sight and hearing, but to the lungs, heart, and digestive system. If there are defects in these vital organs it certainly should be known. The teeth of many children could be saved were they attended to in time. This is specially important for the poorer classes, whose coarse food requires much mastication.

In short, a thorough physical examination of every child on entering school would be one of the greatest safeguards for its mental as well as bodily health.

CHILD STUDY.

THE study of children might be thought to mean the same as what is generally called *child study*, but such is not the case. Child study does not usually include measurements of height, weight, lung capacity, fatigue, pain, etc., but applies more to the study of school children by means of questions which they are to answer. The answers are subsequently classified and conclusions drawn from them. A special word has been invented for child study, called *paidology*. This method in the study of children has been employed mostly by teachers, who have sought, through series of questions to the pupil, to gain some knowledge of what is in the child's mind, and how its mind works.

It will be interesting to give the results of some of these experiments upon school children of our country.

CHILDREN'S RIGHTS.

IN order to test the ideas of children as to rights, the following story was told them: "Jamie's father gave him a dog, but Jamie often forgot to feed it, and the dog cried often at the door. Then Jamie's father gave the dog to a kind little girl who lived down the street."

The children were asked: Who had the best right to the dog, the father, Jamie, or the little girl, and why?

In answering this question seventy per cent. of the boys and fifty-seven per cent. of the girls thought the little girl had the best right to the dog; forty-four per cent. of the children thought, because Jamie had been so cruel in neglecting to feed the dog, he did not deserve it. This seems to weaken the theory commonly held that children are cruel by nature.

About twenty-five per cent. thought the father had the best right to the dog, saying that he had paid for the dog, and he was older and would take better care of it. About eight per cent. said Jamie had the best right, because when a thing is given away you can't take it back again. It was principally the older children who took this last point of view.

IGNORANCE OF CHILDREN.

THE ignorance of children is illustrated in another investigation where most of them were between the ages of five and seven. Fourteen per cent. did not know their ages. The boys were more ignorant than the girls as to common things right about them, where knowledge is assumed. Three-fourths of the children thought the world a plane, and many described it as round like a dollar. Wrong things were specified much more rapidly and by more children than right things, and there was much more variety of wrong things. This suggests a theory of certain criminologists that children learn evil much faster than good. Boys say it is wrong to steal, fight, kick, break windows, and get drunk, while girls are more liable to think it is wrong not to comb the hair, to get butter on one's dress, climb trees, and unfold the hands.

The city children know a little about many things, and so are liable to be more superficial than the country children, yet the city children know more about human nature.

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STRENGTH OF MEMORY.

A STORY of some 300 words was repeated to the children, and they were to write down all they could remember after it was read. A considerable number remembered the first part of the story quite well, but very little of the latter part, showing probably the influence of fatigue. The shorter the sentences and the less unessential the words they contained, the better they were remembered. This is a practical hint to speakers and writers who desire to make more permanent impressions. The girls remembered more than the boys.

In a comparison of white with colored children, the colored children showed the best memory. Those who had good memories stood well in their classes as reported by the teachers.

CHILDREN OF GREAT MEN.

IN a statistical investigation of the early life of fifty great men of the present century, it was found that while they are absent-minded, generally speaking, their memories are very strong in the things they are interested in. In childhood they seem to be more imaginative than average children. It is generally said that a great man owes his success to his mother's influence, but there are many exceptions. They were influenced much by some *one* person, and the mother's place was often supplied by that of an aunt or relative. The child born of parents in the prime of physical life probably has the better chance of greatness, for the average age of the fathers when the great man-child was born was about thirty-eight, and that of the mothers thirty. The average number of children in the families was six. Eleven of the great men were only sons, and sixteen youngest sons; that is, in all over fifty per cent. If it is important to study the criminal to find the causes of crime and thereby know best how to prevent or lessen it, it is perhaps more needful to study great men in order to learn those conditions and characteristics which make them great.

FEARS OF CHILDREN.

ONE often feels that many unnecessary fears and pains are inflicted on children by well-meaning but indiscreet parents. This is illustrated in a study of American as contrasted with London school children. The children of the poorer classes showed a marked difference in their answers to children in more comfortable conditions. The poor children are more natural in their fears, are not afraid of the dark or wild animals or the coal man or even the policeman, but their objects of dread are the upsetting of a lamp, the possibility of father or mother becoming sick. Here we see how hard conditions of life develop practical judgment. There are few evils without some good.

A study of American children shows that most fears are created by parents and servants. The leading fears are those of lightning, thunder, reptiles, strangers, the dark, death, domestic animals, disease, wild animals, water, ghosts, insects, rats, etc. In an Eastern State none were afraid of high winds, but in the West this was one of the main things to dread. In a certain State forty-six of the children were in fear of being burned alive. This was evidently a result of teaching. A majority of the children feared ghosts; others did not dread them because they did not believe in them. One way to rid children of such superstitions was shown by the fact that a large number had been taught to disbelieve in them. But as we cannot prevent children from hearing these superstitions from people who do place confidence in them, it has been suggested to let the children hear the truth at the same time. Harmless or even ennobling fancies might better take the place of more vulgar ones.

BLUSHING.

IT would seem that fear is the real cause of most blushing, which is perhaps a relic of ancient sex fear. There is little uniformity in the way children blush. In some the blushing appears in a small spot and spreads in all directions, or it goes only upwards or downwards, being seen on the neck last. The fear of being noticed blushing increases it; thus one does not blush so readily in the dark. Some are forewarned that they are going to blush through tremor, weakness in the limbs; warm waves pass from feet upwards; the heart seems to stop, then beats more rapidly; blood rushes upwards; there is a hot glow all over, or cold all over; one feels uncomfortable or dizzy;

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there may be tingling in the toes or fingers; something rises in the throat; eyes smart, ears ring, face prickles; there may be pressure inside the head. Some fear they are going to be looked at; others feel foolish or confused, or as if they were going to blush. In waves of blushing it is thought there is probably an increase of flow of blood to the brain with a contraction of the arteries in other parts of the body. Then, as the blushing ceases, the blood is redistributed again through the surface of the other parts of the body, with tingling, prickling, and often sweating; sometimes there is chill, weakness, pallor, or headache. Blushing occurs most at the time of puberty. Girls blush much more than boys, and when they become women this tendency remains later in life than with men.

CHILDREN'S INTERESTS.

IN general children's interests lie largely in what the object is good for, or what it can do.

COLLECTING INTEREST.

THE collecting interest in children is so strong that it can be called an instinct. It rises in early childhood, increases fast after six years of age, and is strongest from eight to eleven years, declining as the child grows older. What a child begins to collect seems to be more a matter of accident. The feeling is that they must collect something. This collective instinct is not a fad, but a natural desire up to eleven years of age, but if it continues on a few years it generally becomes a fad.

The collecting interest is greatest with objects of nature, as birds' eggs, shells, etc. Then comes a desire to find stamps, and cigar-tags are next in degree of interest, followed by the trivial collections of sticks, glass, and buttons. Sometimes the commercial spirit shows itself in buying and trading. Imitation and rivalry are the strongest motives; another incentive is the innate desire for large numbers and great possession.

INTERESTS IN THE BIBLE.

CHILDREN before nine years of age are most interested in those parts of the New Testament which give accounts of the birth and childhood of Jesus. From nine to fourteen years they are more concerned with the Old Testament, especially in the heroic and dramatic elements there described. This is the time they can memorize verses of Scripture best.

In their youth or adolescent period, from twelve to twenty-one about, there is great interest in the Four Gospels and the Acts of the Apostles, especially in Christ and his disciples.

Children at all ages always feel more interest in persons than in objects in the Bible.

These and similar facts as to the time and way in which children show their interest may suggest how and at what age different biblical subjects should be taught them.

INFLUENCE OF TEACHER.

IN order to find out the teacher's influence, a large number of persons were asked to recall their past school experiences and recollection of teachers, good and bad. It was found that pupils were most susceptible from ages eleven to nineteen, and that the good influence of a teacher does not depend upon the length of time the pupil is under his care.

The influence of a bad teacher will affect a pupil earlier than the influence of a good teacher. A teacher in a moment of indiscretion may fatally or seriously injure the pupil's future life.

There is an *unconscious* influence in the teacher's personality which remains a power in the pupil's character; this influence is based on what the teacher is, rather than on what he says. It was remarked of the Earl of Chatham, "Everybody felt there was something finer in the man than anything he ever said."

The pupil is attracted by externals much more than one would suppose, as manners, dress, good looks, and voice. This suggests the importance of neatness and good taste on the part of the teacher.

MORAL EDUCATION.

NO kind of education can be more important than moral. However well the pupil's mind may be trained, and however brilliant he may be, it is of little avail, if there are no good moral habits instilled into him; for otherwise he might live only to become a criminal.

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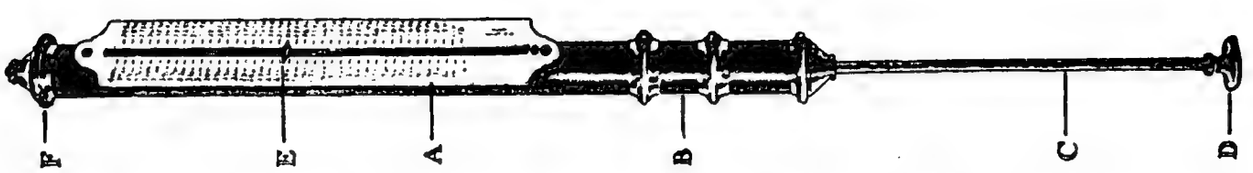
This question was asked of a large number of persons: What punishments or rewards have you ever had that did you good or harm?

The majority claimed to be benefited by punishment. The boys thought the effects of a good plain talk were salutary, and none had a complaint to make against a good "dressing-down." Many were grateful for having had punishment in due season. There is a time in many a boy's life when he thinks he is lord of everything, and it would seem that a good whipping is often *the* best way to cure this defect. Tenderness is excellent for most children, but there are certain natures on whom it is wasted, because they simply abuse it.

Conscience does not seem to be very powerful in children before the age of nine. Preaching, or advice unsought for, does not seem to do much good, while suggestion does. As to the influence of companions, it was greatest between the ages of ten and fifteen. This influence is next to that of home.

The influence of parents almost all described as of a pleasant and helpful nature. The difference in moral influence due to sex of parent, that is so often dwelt upon, does not show itself. Nearly all the things to make a noble character are found in both father and mother. Moral training not only consists in moral habits, but in the development of the feelings and emotions which have their roots in the religious sentiments inculcated early in the child's life. As the parents have the heart and sympathy of the child they can make it almost what they will. If they gave as much time and patience to the nurture of their children as they do to society, business, amusement, and pets, much of the evil and crime in the world might cease. Unless children are brought up and trained well, and those provided for who have no proper home, there is little probability of making the world better. We must place the knife and fork in the child's hand, if we wish them properly held. So morality, like etiquette, must be taught through repeated acts, that become a habit. There is perhaps nothing more important to the individual, family, and country than the *moral* education of children.



A TEMPORAL ALGOMETER. AN INSTRUMENT DESIGNED BY THE WRITER TO TEST THE SENSE OF PAIN.

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THE LAYING OF THE PIPE.

By Theodore Waters.

JOHNSON saw him first, on the landing-stage at Curaçao, and named him Plon-Plon, for his resemblance to the French Pretender. We were attracted by his consequential bearing in the midst of his many friends, who clustered around him tumultuously and shed heavy tears as he held his hand to his heart and made a low-voiced speech in Spanish. And afterward, when the steamer was far on its way to Central American ports, his interminable loquacity kept him constantly in our view.

Yet he was not received into the circle of the smoke-room with the same assurance of good fellowship that mutually bound the rest of us. And the relation became more strained as the voyage went on. Perhaps it was the sick husbands who began it. So when, one day, Plon-Plon broached the subject of Central American revolutions, he did not meet with entire sympathy. Plon-Plon, however, went on talking unabashedly of the causes and effects of these sanguinary affairs. His interest, as we found, was more than merely ethical.

"Why have we so many revolution? Hah!" (He had a way of suddenly interjecting this exclamation between clauses.) "That is because—what you call—the incumbent do not make the impression to—to—squelch, you say—the ambition of his enemy. He should—hah!—he should burn their bridge behind him. That is it. When every man wish to be president himself, every man must be suppressed. It is only the dictateur that shall come to give the long peace."

"Yes," remarked Watson dryly, "I can see a dictator living a long time down here."

"And then there is, what you call—the right instant to begin. I have known the revolution to begin in the winter—hah!—the folly of it, when the people are busy with the crop. No. No. Revolution should come only in the spring—when the people have nothing else to do. But the leaders forget—they forget—hah!—too often, what you Americanos call, to lay the pipe."

"Well," said one of us, "judging by the amount of money annually spent by Uncle Sam in chasing filibusters, I should think *some* pipe-laying was done."

"Oh, but that I do not mean," replied Plon-Plon sagely. "There is other way, more important—much more important. Filibuster, they cost too much of the money which we have not. So. You say the pen he is mightier than the sword—hah!—well, discontent she is more powerful than the rapid-fire gun. Is it not so? Yes? I know one case, and—*caramba*—we are in the middle of the sea—I may tell you that which will happen before we land."

We settled comfortably in anticipation.

"It is of a friend of mine," went on Plon-Plon. "A statesman, a president maybe—hah!—even a dictateur. He have planted the seed of the revolution in the country to which we go. It is certain to be new government when we arrive. Hah! It is tender subject. A woman? What else? They are in all our revolution. This one, she is bright. She has many friend—as you say—at court—in the bosom of the government. She is devoted to my friend—to his cause. In the old days it began, the tender passion—she follow him to his exile. Hah! That is long time. He is cavalier no more. He is great statesman. He has formulate the grand plan. One day he will make the great *coup d'état* when he return to his own country. But she do not see. Hah! She is still a woman. She care only for the cavalier. To her he look not changed at all. And she—she beg for the grand wedding at the church. She is but a woman. My friend, he tell me this.

"It is one day during the siesta, and she beg him more than he can stand, and she ask him what she do for him that he go to the church with her. Then one grand idea come to him. Hah! Yes, she may do—she may do very much. She may go to his country to plant the seed of revolution that is so necessary. At first she do not want to leave him, and he turn his back and say she no longer love him. That fix her. She will go anywhere, she will kill, die, that he smile again once down upon her. Hah! So

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is it. She go to his country. She know the president's sister, and she work her way to the government circle. She make a-love to all the official. She learn their secrets—how much money; how many soldiers; how the unjust tax is put upon; how the affair of state is carry on; how the Americano feel for his claim against the government. Hah! It is the laying of the pipe. And she send word to him, and his friends they go among the people and tell them to make ready in the spring."

Plon-Plon paused and smiled comprehensively through the smoky atmosphere of the room.

"Well," interrogated Johnson, "what next?"

"Well," he replied, amused, apparently at our want of perception, "it is now the spring."

There was commotion in the Central American port when we anchored. There is always more or less commotion in these ports on the arrival of a steamer, but this was different. In the first place, the steam launch and bumboat navy of the existing government came alongside, and the commodore of the fleet stood up and balanced himself nervously in the stern of one of the launches, and read a lengthy paper in Spanish. He spoke rapidly, and his incoherence was greatly increased when an incoming swell caused him to sit down suddenly in the midst of the most important clause. Translated, the paper was found to be a warrant for the arrest of one General Herara, "a conspirator against the government," supposed to be on board the steamer.

We all glanced at Plon-Plon, who stood nearby, his face contracted between an anxious smile and a confident grin.

"Does he mean you?" queried our captain sternly.

"Si, señor," replied the man, relapsing nervously into the vernacular.

"Then you have been travelling under an assumed name on my ship. A revolutionist, eh?"

A deprecatory shrug was answer enough.

The captain was a blunt man. Turning to the interpreter, he said:

"You tell those damned gringoes to go take a reef in themselves. This man is travelling under the protection of the United States flag, and nobody can disturb him without incurring the displeasure of Uncle Sam. Tell them that with my compliments!"

"By Jove!" exclaimed Johnson. "Wouldn't that bring down the gallery of a Bowery theatre. We ought to applaud."

The grin on Plon-Plon's face immediately got the better of the smile. He drew himself up proudly to the full height of his French heels, and looked down with disdain on the commodore of the fleet. There was much jabbering on the boats, but the decree was irrevocable, and presently the whole navy put off toward the shore.

The captain's refusal to surrender Plon-Plon was evidently a deciding event in the conduct of the revolution, for it immediately broke out in full force, and sounds of strife on shore shortly became so loud that we made a pool on the result. We had arrived in the afternoon, and in view of possible complications no one was allowed to go on shore. Most of us sat on deck all night, listening to the uneven volleys and watching the flashes in the darkness.

"The fracas seems to hover around one spot," said Johnson. "I suppose it is the executive mansion. Perhaps they are fighting for the president."

"No," answered Plon-Plon, who never stopped his voluble chatter of affairs revolutionary. "It is the custom-house. I know the place. I was clerk there—once."

"To be sure. I might have known. Custom-houses are the natural target for revolutionists. By the way, what do you suppose has become of that woman you were talking of yesterday. If she is with the governmental forces, doesn't she run some risk of being shot by her friends on both sides of the fence?"

Plon-Plon shrugged his shoulders unconcernedly. Women—this one in particular—were of little moment to him just then.

"At any rate," added Watson with the slightest inflection of a sneer, "she would be safer here with you under the protection of the flag than where she is."

But the man merely shrugged his shoulders again and walked away.

When morning dawned the activity on shore was redoubled. The insurgents and the governmental troops chased each other up and down, and it was curious to see how a little success on either side swayed the personal equation of the combatants. Once when it seemed to go the way of the insurgents, numbers of governmental soldiers changed their uniforms by putting on straw hats and deserted to the revolutionary side.

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But later, when it went the way of the government, these same deserters, accompanied by many patriots, crawled under the open ends of the wharves and waited, undecided, for night. One of these men was shot as he ran down a pier, for he suddenly bent double, his head between his legs, and rolled like an acrobat a matter of a dozen feet. His body came flat on the bulkhead with a whack that could be heard all the way to the steamer. He did not move again.

"My God!" exclaimed Watson. "I wonder which killed him, the ball or the fall?"

Several accidental bullets reached the steamer. One of them hit the funnel. One buried itself in the woodwork of the house. Finally a spent ball hit the second officer in the hand, tearing off a finger-nail. Then the captain ordered his vessel moved out of range. But even then we were near enough to take a lively interest in the fight.

Late in the day we saw a youth running along the water-front, pursued by a dozen or more soldiers wearing the governmental hat. They seemed bent on getting him alive, for we did not see that they fired at him. He was distancing them perceptibly, and we thought he would get away, when from a street farther on another squad of soldiers appeared, ready to head him off. He immediately turned down the nearest pier.

When he reached the stringpiece the boy tried to climb down under the pier, but the men concealed there, thinking only, no doubt, of their own safety which thus became endangered, refused to let him enter.

"Well, of all the cowardly curs," cried Johnson, looking through a glass. "To beat off a boy like that. There he goes."

Even without glasses we could see the despair that came over the youth at the reception given him by his fellows. He raised himself and looked back over the stringpiece at the coming of his pursuers, hesitated a moment, and then with a gentle motion lurched into the water and swam steadily out into the harbor. The government troops, evidently thinking he had gone under the wharf, slackened their pace, and walked down the pier, gesticulating. Not until they had nearly reached the stringpiece did they see that the boy was already far out, with only his face and cap showing above the water. Then they began firing at him. Yet luck seemed to be with the swimmer, for no shot appeared to hit him. The mark was small and the rifles were of an ancient make. At times he must have been concealed from the men on the wharf by the waves dancing up and down all around him. We gazed anxiously at this remarkable spectacle, and while we looked one wave bigger than the others went completely over him. When it rolled on it took the swimmer's cap with it, and in its place there floated a mass of long black hair.

Captain Benton was the first to recover from the general shock.

"Why!—it's a woman!" he cried. "Hey, there, stop that firing, you dirty cowards! Curses on them! Down with the boats—you, Mr. Jones, a boat to that woman! Come! Quicker! Quicker! Around with that davit—ah, you bungler! So—inside now all of you—lower away. Good! Give way now! Never mind their bullets; they won't hit you. Pot-shooting at a woman in the water! Well, of all the——"

Just then he caught sight of Plon-Plon, who stood staring at the distant face.

"So—so—*this*," exploded the captain. "So *this* is what your bloody revolutionary schemes lead to, is it? Damme, sir, if that woman dies, I'll—I'll feed you to those hounds over there, I will, so help me God!"

Plon-Plon made no sign. He stood gripping the railing, apparently fascinated by the face with the black hair streaming after it under the glistening sunlight. Captain Benton spluttered and cursed. We watched without a word. The rowers strained heavily. The men on shore kept on firing, and the water flirted in little geysers all around the swimmer as the bullets struck. The woman pulled steadily, but her stroke was weakening. Suddenly she waved her arms wildly and sank out of sight, and presently the faint remnant of a gurgling scream came over the wind. One of the bullets had reached her at last.

Mr. Jones stood up in the stern of the boat, and shook his fist at the soldiers on the pier. The firing stopped. The foremost rower dived as the boat glided to where the woman went down. After a long time, during which one of our passengers (it sounded like Mrs. Morton) kept repeating at my elbow the words, "Oh, dear! Oh, dear!" over and over in a monotone, the man came up, and we could see he had her. They were hauled into the boat, which now came swiftly back to the steamer.

The first officer carried the woman up the

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landing-ladder as he might a great baby, and as they passed into the cabin we saw that, while yet attractive, she had nearly reached that early period in life when Spanish-American women suddenly become haggard and old. The stewardess and Mrs. Morton were with her while the ship's doctor worked over her, and we knew without asking that the long immersion was the least dangerous of her recent experiences. Except for exclamations of pity from the women, little was said during our period of waiting. After a certain time the doctor came forth and answered our unspoken question with a solemn shake of the head. He looked around until he found Plon-Plon.

"You are wanted inside," he said.

Plon-Plon stared; he did not move.

"You, I mean. You are Felipe Herara, are you not? She wants you. You had better go at once. She is dying."

The man became panicky.

"I—I? No, it is not I, who—my friend—you see—that is—I am the—I——"

Then, suddenly taking note of the sinister intelligence quickening the expression of those standing near, he pulled himself together and stalked into the cabin, leaving the door open behind him, and—those of us who understood Spanish translated what followed for the benefit of those who did not.

Mrs. Morton stood at the head of the bunk crying softly. The stewardess was removing the bloody evidence of the doctor's examination. The pallor of the dying woman's usually swarthy countenance was heightened by its frame of raven hair, and out of its deathly whiteness her eyes gleamed like stars. When she saw Plon-Plon, the look of pain on her face changed to one of ineffable gladness, and raising on one elbow, she gave a great cry of joy—"Felipe!"

Plon-Plon staggered over and fell on his knees against the bunk. His face went out of sight in the coverlet. Her hand crept into his curly locks and nestled there.

"Anita! Anita!" he muttered smotheringly.

"Oh, Felipe! Felipe! My own—my love! See, Felipe—I have proved. Is it not true? You love me now—do you not? You love me now! Oh, see, I die! You love me now, Felipe, Felipe!"

"Anita! Yes, yes, my own Anita!"

"Ah!" The sigh of rapture that accompanied this was not needed to start the tears that fell in that cabin.

"Oh, Felipe! Felipe! I have done so much to prove. Felipe. I go—to the capital. I make love to the men I hate—hate—for your sake, Felipe, for your sake. And some they love me, and some they scorn. And I learn the state secrets—and I tell your friends that they tell you. And I—oh, Felipe—I go to the people by night and tell them—Felipe—how great you are, and good, and noble, and true—how you think only of their interest—even so much that you forget me—and how you will come to liberate them. And—oh, Felipe—the people believe—for am I not the proof—of how great and good and noble you are—oh, Felipe—you love me now?"

"Anita! Anita!" The man never raised his head.

"And then, and then, Felipe, I sow the seed of the revolution—in the palace—in the hovel—in the field—and the people rise, and it seem to go our way, and I bid you come to prove that I love you. And then there is one traitor—ah, one traitor—he love me, Felipe, but when he hear of you and how I love you, he turn—he has revenge—ah, Maria—he tell all to the president. And then, Felipe, I fly—I put on the boy's clothes—I am pursued—I go to the woods—to my friends of the fields, and they protect—but, oh—I bring but death to one—and but death to another—and then I am not welcome, and at last I can no longer get shelter—and then I come back to the town—and fight. Oh, Felipe, I fight for you—I fight for you. But I know you will come, Felipe—I tell all you will come—and they believe—and we wait and we wait. Oh, Felipe—have I not proved my love?

"And then the steamer come, and you did not appear, and the people—they lose heart—and I tell them only to wait—a little—it is from afar these things must be managed—only to wait for the next day. And some of us we live in the wharves—and some in the woods—and sometimes it is our way—and sometimes it is not—and some are in want—and some are struck down under the heat. Oh, Felipe, why did you not come?

"And then I am pursued again—and I run, I run—and then there are some behind, and then there are more in front—and they wish to get me alive, for the traitor is among them, and I am to be his—so did they bargain. And then I go to the pier

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and try to hide beneath—but those that are there say no, it is better not—and then I take to the water, for there is the great steamer—and I try to swim to her. Did you not see, Felipe—did you not see? And I pray to the Virgin that you come, that you come, and—you did not come—and I grow weak and weaker—and I think of the old days, Felipe—when we love, and I am but the little señorita, and you are singing to me at my window—and you tell me your great dreams—and by and by, when the way is not clear, Felipe, and you grow down-hearted, we sit under the great star—and I dream for you, Felipe—even as now, even as now, Felipe—and I paint the dream in glowing color until you smile, you are so glad and brave and rise again and go forth like the great cavalier. I think of all this, Felipe, and wish it were all again—and then, and then—there is the pain—and—my prayer is answered, for I am here with you, Felipe—and you have come, you have come. Oh, have I not proved, Felipe—have I not proved?"

The man's form shook with the emotion called up by the woman's words. But his was not the only form that shook. There was that in the room which must have pierced the armor of the hardest heart, and as she babbled on with gradually weakening voice, we succumbed according to our power of resistance and filed out one by one.

The reaction took two forms, pity and denunciation.

"Poor, poor thing!" was heard from the women.

"The miserable cur!" came from the masculine group. "To think it was his *own* story he was telling us yesterday."

"He seems visibly contrite now," observed one.

"Contrite!" exclaimed Johnson. "Bah! It was the situation, nothing more. I once knew a Bowery tough, who wept bitter tears over the death of little Eva in 'Uncle Tom's Cabin' and then went home and clubbed his old mother for the price of a can of beer. It's all the same feeling."

Toward the last the woman and her idol were alone, and none of us knew just when the end came. We sat on deck in the gathering twilight waiting in deference to the course of events. Occasionally we heard shots, and a red glare on shore showed where the incendiary was at work.

When he came forth it was with the weight of added years. He staggered to the rail and leaned over, looking into the black water. Nothing was said for a long time. Then Captain Benton went to him and spoke sternly:

"Herara, I told you earlier in the day if that woman died I would give you over into the hands of the authorities. Well, there doesn't appear to be much authority over there just now. But you must go ashore at once, and take your chances. I will not have you here any longer—Mr. Jones, lower a boat and set this man on shore."

"Ashore—now!" replied the man in a dazed manner.

"At once!" replied the captain shortly.

"And——"

"She will go with you. We are in port. I cannot carry her to sea. You must get her decent burial. I believe you will do that. Ready, Mr. Jones?"

The preliminaries were quickly over. He took leave of no one, and we stood watching with bared heads while they pulled away toward that red glare on shore, until, like Elaine's barge, they were

Far off, a blot upon the stream.

. . . . . .

When the steamer reached Sandy Hook, several days later, Johnson borrowed a New York paper from the pilot, and the first thing that caught his eye was a cabled account of the recent revolution. This was in the nature of ordinary events. But what inflamed Johnson was a stirring account of the *coup d'état* of General Felipe Herara, the new star in Isthmian politics. It was a striking parallel of the tragedy of Cæsar, the paper said, and Herara was a new Marc Antony. It seemed that the insurgents had been led by a woman, who had been driven into the harbor and shot by a traitor. General Herara rescued her at the risk of his life, and bringing her back to the city, laid her down in front of the burning custom-house, where the insurgents were most numerous, and there, with his back to the flames, he repeated her dying prayer for freedom, until the people were maddened and ran about the streets crying aloud for revenge, and calling on him to lead them to liberty in the name of the sacred dead.

Johnson said nothing when he finished reading the account, but it was merely because he had not words.

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THE TRUTH ABOUT "CHRISTIAN SCIENCE."*

A PSYCHOPATHIC STUDY.

By Thomson Jay Hudson, LL.D.

Author of "The Law of Psychic Phenomena," etc.

IT is axiomatic that any belief which is alleged to be founded upon observable phenomena is entitled to respectful consideration and scientific examination. I hazard nothing in saying that "Christian Science," so called, has abundantly demonstrated its right to both. Its votaries, claiming Divine power, have healed the sick by hundreds of thousands; yet they have been recognized by the medical profession only by bitter denunciation. Claiming an intimate acquaintance with, and often verbal inspiration from, the Divine Father, they have poured the balm of religious consolation into many a stricken heart, only to be repaid from the pulpit by solemn objurgations and strenuous anathemas. They have gone into the highways and byways, and proclaimed their Divine mission from the housetops, only to be answered by the jeers and ridicule of the ungodly. And, notwithstanding their solemn asseverations that they teach the only science worth knowing, Science itself has assumed a lofty mien and passed by on the other side.

Perhaps it was natural for the medical profession to indulge in a noble rage, owing to its cautious conservatism—that is to say, its ancient prejudice against everything new that claims to heal the sick. The clergy must be expected to indulge in hostile criticism, because the Christianity of Christian Science is so very different from the Christianity of Christ. As to the unseemly levity of the irreverent laity—its tendency to laugh at what, to its uncultured mind, seems ridiculous—it is too well known to require comment or serious animadversion. But the attitude of Science is indefensible. It has no right to ignore facts, to indulge in prejudices, or to neglect to explain phenomena of such obvious importance as that which lends to Christian Science its air of supernatural mystery, and invests it with sociological, as well as pathological, importance.

The most that I can do within the space at my command is to outline the salient psychopathic features of the phenomena, and to suggest thereby the proper line of scientific examination, relegating to the professional alienist the exhaustive study of that which is so obviously within his domain.

THE DUAL, OBJECTIVE AND SUBJECTIVE, MIND.

THE subject naturally arranges itself under two heads, namely: (1) the Psychopathic condition of the founder of the sect; and (2) the Psychopathic condition of her followers.

To those who are acquainted with the fundamental principles of the New Psychology it is obvious that the founder of the sect known as "Christian Scientists" is an object of commiseration rather than of denunciation. She is simply a victim of self-delusion, arising from an ignorance of the fundamental law of psychic activity. The law is briefly this:

Man is endowed with a dual mind, or two states of consciousness. For convenience of treatment they have been designated, one as the Objective, and the other as the Subjective mind. The former is the mind of ordinary waking consciousness. The latter is the intelligence which is manifested in dreams, trance, or trance-like conditions, when the objective mind is inhibited, as in sleep, or in somnambulism, spontaneous or induced. The salient feature of differentiation which bears upon the case under consideration is that the objective mind is capable of independently conducting the process of inductive reasoning; whereas the subjective mind is devoid of that power. That intelligence is dominated by the Law of

* [The next issue of this magazine will contain another article by Mr. Hudson on this same subject, explaining how the cures wrought by Christian Science "healers" are really effected.—Editor.]

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Suggestion. In other words, it takes its premises from an extraneous source; and it reasons deductively from those premises or suggestions. The latter may be conveyed to the subjective mind in many ways, prominent among which are the words or affirmations of another, as in hypnotism; or they may be imparted by means of the ordinary processes of education, as in training children; or the objective mind of an individual may convey dominating suggestions to his own subjective mind. These are called "Auto-suggestions." If truthful, they are beneficent. If false, they may result in insanity, as in monomania. Any form of false suggestion, indeed, may result in insanity, if it is persistently dwelt upon to the exclusion of the countervailing suggestions of Truth. When this occurs, the subjective mind is in control; that is, it dominates for the time being the dual mental organism, truth is subordinated, and reason is dethroned.

The salient characteristic, however, of the subjective mind which bears directly upon the case in hand, is its prodigious faculty for reasoning deductively from given premises to legitimate conclusions. It is akin to intuition, and it is always the concomitant of the latter faculty. Its manifestations, indeed, are often confounded with intuition; and it is this circumstance that gives rise to so many claims for the superior "intuitions" of women. But their so-called intuitions, when analyzed, are often found to be mere deductions from premises that may or may not be true. The point is that the deductions of the subjective mind are always legitimate and logical, whether the premises are true or false. If true, the result is often a work of genius. But if the premise is false, the work soon reveals the fact; for truth cannot be evolved from a falsehood, if the deductions are legitimate. That is to say, a false premise carried to its legitimate conclusion always ends in an absurdity. If the author is mentally balanced, he will detect the absurdity himself and abandon the premise as untenable; especially if he is well endowed with that indispensable quality of a well-balanced mind —a fine appreciation of humor—a keen sense of the ridiculous.

Unfortunately for the poor psychic whose subjective mind is in control, and who is dominated by a false suggestion, he has no sense of humor, and is intellectually impervious to ridicule. Humor is not a faculty of the subjective mind. True humor is a concomitant of reason—a criterion of induction. It weighs facts and principles in its own balance, detects the incongruous elements of thought, and resolves them in its own alembic. In other words, the legitimate function of humor is to separate incongruous ideas and exhibit them in violent contrast. Its legitimate object is the ascertainment of truth, on the principle that no truth is inconsistent with any other truth in the Universe of God. Thus Mark Twain, in his humorous article relating to Christian Science and its founder's book, has more clearly and effectively shown the fallacies of that work, and demonstrated its utterly unscientific character, than have all the arguments of others combined. The fact is, the book does not call for serious argument, much less for denunciation, or vituperation. Its only legitimate place is in the library of the alienist. Its author is a psychic, and the book is purely and simply a psychical phenomenon. As such it deserves serious consideration, for it stands unique as an illustration, on an extensive scale, of the vagaries of psychical "mentation" when the subjective mind of the patient is dominated by false suggestion, and reason is in abeyance. A few words will make the foregoing clear to the mind of the reader.

LEGITIMATE DEDUCTIONS FROM FALSE SUGGESTION—THE FOUNDER'S BOOK.

THE "fundamental principle" upon which Christian Science is based, as set forth in its founder's book, is that "there is no such thing as matter." It will at once be seen that such a proposition affords the best possible illustration of the mental condition of its author—that is to say, of the dominance of a false suggestion, and the total inhibition of the inductive faculties or powers. Each is shown in the author's total obliviousness of all the facts of human experience; for if man knows anything he knows that the material universe is a stupendous reality.

Now comes in the deductive logic of the psychic: Dominated by the fundamental postulate—the non-existence of the material universe—and realizing that, in all human probability, something exists, her deduction is that—"God is all." This is not an illogi-

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cal deduction from the premise; but whether it is demonstrated to be true, as the author thinks it is, by the fact that it means practically the same thing when read backwards, is a question which we will not stop to consider. This is followed by two other propositions, namely, "God is good" and "Good is mind." These are also held to be demonstrated by the fact that they can be read backwards without destroying their "scientific" validity; although, in view of the example we are considering, it would seem that the latter proposition, read backwards, should be stated with some qualifications. At any rate, these propositions cannot be said to be illogical deductions from the premise, although they appear to be merely incidental statements, not essential to the argument.

But in her next proposition she resumes her logical attitude and restates the premise and the conclusion in the same sentence, thus: "God, Spirit, being all, nothing is matter."

This is another of her reversible, self-demonstrating propositions, and who shall say that the conclusion is not a logical deduction from the premise?

She has many other propositions of the invertible order which she imagines are mathematically demonstrated by the fact that they can be inverted. No one but an alienist, familiar with the phenomena of paranoia, would believe this statement without proof. Here is what she says:

"The metaphysics of Christian Science, like the rules of mathematics, prove the rule by inversion. For example, there is no pain in Truth, and no truth in pain; no nerve in mind, and no mind in nerve; no matter in mind, and no mind in matter; no matter in Life, and no life in matter; no matter in Good, and no good in matter."

Leaving out of consideration the obvious absurdity of assuming to demonstrate a proposition in philosophy by the mathematical process of inversion, the fact remains that each one is logically deducible from the original postulate. They are corollaries of the proposition that there is no such thing as matter.

Of course the unfortunate author is unable to detect the monstrous absurdity of her original postulate, and, consequently, she shrinks not from the conclusions necessarily derivable therefrom. This is shown throughout the whole book. Hence she does not hesitate to declare that there are no such things possible as evil, sin, pain, sickness, or death. How could there be, if there is no such thing as matter—if all is God, and God is all?

SUGGESTION PROVED FALSE BY HUMAN EXPERIENCE.

THUS far, then, the author is logical. But it is the logic of the subjective mind when dominated by a false suggestion—a monstrous absurdity. Not the faintest glimmer of the light of inductive reasoning illumines the dark and dismal picture. Not one fact of human experience is considered, nor one Law of Nature consulted.

The author had smooth sailing so long as she confined herself to laying down general principles. But she was intent on writing a book designed to apply her "principles" to the affairs of practical every-day life and human experience. It was then that the logical trouble began. She undertook to tell how to heal the sick when, according to her theory, nobody was, or could possibly be, sick; because God is all, and God cannot be sick. Moreover, there is no such thing as matter, and, consequently, nobody has a body to furnish a basis of sickness or of pain. Besides, matter cannot feel pain, first, because there is no such thing as matter, and secondly, because there is no such thing as pain. Sin cannot exist, because God is good, and God is all. Death is impossible (1) because nothing but matter can die, and there is no such thing as matter; (2) because God is all, and God cannot die.

These and a thousand other contradictions and absurdities fill the whole book. The obvious reason is that, when the author comes to treat of the facts of human experience, she must necessarily employ the terms of human experience; and since her theory recognizes the existence of no such facts, the result is necessarily a monstrous hodge-podge of monumental absurdities. Such a conflict between theory and fact could have no other result, in the nature of things, especially when the theory is constantly reiterated in connection with the facts.

Nothing more need be said of the book itself. It must be read to be appreciated. To the student of neuropsychopathy it affords an abundant supply of illustrative material. To the student of the New Psychology it is invaluable as illustrating the

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distinctive powers and limitations of the two minds or states of consciousness. To the non-professional reader it furnishes a frightful example of the danger to be apprehended from allowing the subjective mind to usurp control over the dual mental organism.

DEFENDING THE HONESTY OF THE FOUNDER'S BOOK.

I CANNOT dismiss this branch of the subject, however, without uttering a protest against the constant iteration, on the part of the enemies of the unfortunate lady, of the charge of plagiarism. The story is that she copied the manuscript of the late Dr. Quinby and published it as her own after his death. The charge is, to use no harsher term, simply infamous; especially since Dr. Quinby is no longer here to defend his own reputation. Besides, the lady herself denies it most emphatically. On the contrary, she says that the book was Divinely inspired; and she unquestionably believes it. Her followers also most fervently believe it, and hence their veneration for the book as of equal authority with the Bible. She also intimates that she was the "woman clothed with the Sun," who is mentioned in the Apocalypse; and good Christian Scientists, including honorable women not a few, fervently believe that the "little book," which the "mighty strong angel" commanded St. John to eat, was, in point of "scientific" fact, the very book now under consideration. This, it is needless to say, has caused the enemy to blaspheme, the mildest form of which consists in the admission that the indigestible character of the contents of the book, together with the subsequent experiences of the seer, lend an air of plausibility to the supposition.

It has also been claimed that the idea of the non-existence of matter was not original with the author. That may or may not be true without impairing the validity of her claim to originality in her method of treatment. Bishop Berkeley would be the first to defend her against the charge of plagiarizing from himself; and he would probably stand aghast at the result of carrying his pet theory to its legitimate conclusions in dealing with the facts of human experience. It is to the last degree improbable that she ever saw or heard of the writings of Bishop Berkeley. Certainly the philosophical arguments by which he sought to sustain his theory are entirely absent from her work.

OF THE FOLLOWERS OF CHRISTIAN SCIENCE.

THE next branch of the subject relates to the psychopathic condition of her followers. Indeed, the only justification for discussing the subject outside the journals of psychiatry, is the fact that the sect has gathered its forces from all ranks of society, that it numbers its followers by hundreds of thousands, and that its insane delusions threaten to become epidemic and to fill our insane asylums. Not that all who call themselves Christian Scientists are either mattoids or paranoiacs, or that they are all in imminent danger of losing their mental balance; those charges are obviously the gross exaggerations of sectarian prejudice or of professional jealousy. On the contrary, there are vast numbers who are rated as Christian Scientists who know little of, and care less for, the theories of the founder; and therein lies their safety. It is only those who undertake seriously to master the theory and to harmonize it with the facts of experience that are in imminent danger of mental alienation; and even they may escape the serious phases of paranoia if they have not acquired, or are not congenitally afflicted with, a neuropsychopathic tendency. Unfortunately this tendency is alarmingly prevalent in modern society of all grades, as the records of the lunatic asylums testify, to say nothing of the numerous comparatively harmless mattoids who are still allowed to run at large.

"BY THEIR FRUITS YE SHALL KNOW THEM."

AMONG the numerous causes which unite to swell the ranks of Christian Science there is one which seems to be of almost universal application, and that is the astounding lack of the power of logical induction in primitive minds. Thus, the founder's book iterates and reiterates that her theories are demonstrated by facts of every-day experience. What facts? Why, the fact that people who believe in her theories are healed by other people who believe in her theories. This is reënforced by the Scripture quotation, "By their fruits ye shall know them." This is the sum total of the inductive logic of Christian Science. I have said that it is the logic of primitive minds. Thus the

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American savage, whose theory of disease is that the patient is beset by evil spirits, effects his cures by frightening away said evil spirits by means of hideous noises and a diabolical make-up. The best authorities tell us that the Indian medicine man's record of cures equals that of the M.Ds or the C.S.Ds. Doubtless the savage regards this as demonstrative of the correctness of his theory; and the Christian Science logician must admit it, for "by their fruits ye shall know them."

The same remarks apply alike to the voudoo doctor's theory and to those of the fetish worshipper, who simply attaches his fetish to the patient; for they also cure disease. Are the theories of Voudooism and Fetishism "demonstrated to be true" by their "facts" of successful healing? Certainly, if the "inductive" logic of Christian Science is valid. "By their fruits ye shall know them" is just as valid for Fetishism as it is for Christian Science, but it requires only the faintest glimmer of the light of reason to enable even the wayfaring man to see that it has no valid application in either case. And yet this is the sum total of the "inductions" of Christian Science. That is to say, the fact of healing is the only fact adduced to prove the theory that there was nothing to heal. Every other fact in nature is systematically denied.

And this is the logic which has won the great bulk of its proselytes to Christian Science. And these are the phenomena alluded to in the beginning when I said that Christian Science deserved a scientific investigation. I also alluded to the religious consolation which many have derived from their connection with the organization. Far be it from me to seek to deprive any stricken soul of the comfort and consolation derivable from religious emotion, by whatsoever means it may have been evoked. It is mentioned here only as one of the many causes which contribute to the success of the Christian Science organization. It is, perhaps, natural for the superficial mind to associate religion and mental healing, owing to the sacred character of the Great Healer. But he did not proclaim it as a religion *per se*, but merely as an element in that principle of universal altruism which was regnant in his soul. One might as consistently call hydropathy a religion, because of the association of the idea of water with the sacred rite of baptism. Practically speaking, the association of mental healing with religion by Christian Scientists has been employed to coin into hard cash the most sacred emotions of the human soul.

Again, it has been remarked that the beliefs of primitive peoples are often held with an emotional tenacity inversely proportioned to the amount of evidence adducible in support of such beliefs. But Christian Science, so far as I am aware, furnishes the only example of a great body of people who, with fervent emotion, cling to a belief in that which they know is not true. This is, literally, atavism run mad; for it is more than atavism, in that it embraces a pronounced pathological element unique in the history of mental degeneracy. This well-recognized force must, therefore, be counted as one of the most essential factors which contribute to the success of Christian Science.

A MODERN MODIFIED FETISH WORSHIP.

ATAVISM, or the tendency to revert to primitive types, is a force just as potent in the social, political, and religious realms as it is in the domain of mental and organic life. In the social and political worlds it is manifested in anarchism and socialism. In the religious world its tendency is often in the direction of that most primitive of all known religions—Fetishism—the worship of inanimate objects—the earliest form of idolatry.

In this age of enlightenment, it is, of course, a comparatively rare occurrence for the civilized world to be invited to witness a decided recrudescence of Fetishism in its pristine purity. Mere survivals are comparatively common—so common, in fact, and so modified by environmental conditions, as to escape the notice of all but the critical anthropologist. Even in the revivals of Fetishism, its crudest forms are thus modified by later forms of worship.

Thus Christian Science, which is probably the crudest form of Fetishism possible in this age and country, is a decidedly modified form of primeval Fetish worship. In fact, it necessarily includes the later forms of idolatry, as well as some of the essential elements of polytheism. It cannot be said to be modified by Christianity, the only thing Christian about it being its name. All the rest is pure assumption. Were we dealing with other than a problem in psychiatry, it

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would be called "blasphemy." But the proverbial cunning of madness alone is displayed in assuming the name and in making the claim that it is a superior form of Christianity. Thus divested of the assumed element of Christianity, nothing remains of the religion of Christian Science but a compound of Idolatry, Polytheism, and Fetishism.

I employ the term "Idolatry" in the sense that it consists in the worship of anything other than God himself; and the term "Polytheism" in its accepted meaning, the worship of a plurality of gods. They may, therefore, be considered together.

ONE OF THE FRUITS—BLASPHEMY.

THE founder of the sect has laid the foundation for the worship of herself by reconstructing the Lord's Prayer, apparently for that purpose. Thus the opening clause, "Our Father which art in heaven," is transformed into, "Our Father and Mother God, all harmonious." It will be observed that the words "which art in heaven" are cunningly omitted, and the words "all harmonious" substituted; thus evading the implication that the God whom they worship is all in heaven, while the Mother God is still on earth. The substituted words—"all harmonious"—clearly convey the idea of plurality. Otherwise they would be meaningless; for, whereas a unitary God must be supposed to be "all harmonious" with himself, it does not follow that a Mother God on earth is "all harmonious" with the Father God in heaven. Hence the necessity for the asseveration in the Christian Science ritual of worship.

Of course no one can say positively that the unfortunate lady revised the Lord's Prayer with the intention of including herself in the Godhead, but it can be readily believed to be true by those familiar with the salient symptoms of the particular forms of mental alienation, which we have been considering. Monumental egotism is a never-failing symptom of mental degeneracy, and our asylums are peopled with those who believe themselves to be God. What she believes, however, is of small importance compared with the deplorable fact that she is worshipped as the "Mother God," equally with the Father, by the more advanced (in mental degeneracy) of the Christian Science "Church." It is this fact that invests the whole subject with interest to the alienist and with importance to every sane man and woman.

The most astounding of all the manifestations of the atavic tendencies of Christian Science consists in the practice of Fetishism, practically in its primeval purity. Many such practices are revealed through private sources, but I will confine myself to one or two of those that are already notorious. First, then, the founder's book itself is a fetish. In the first place, it is worshipped as of Divine origin, equal, if not superior, in authority to the Bible. Again, the book is fervently believed to be itself invested with the Divine power of healing. The authority for each of these beliefs is found in the book itself. Its author's claim to Divine inspiration is boldly stated, and the faithful are informed that a devout perusal of its pages will heal their diseases. Accordingly, the truly good Christian Scientist reads it in an ecstasy of holy joy, and some of them have been known to sleep with it under their pillows. If this is not fetish worship, will some unprejudiced student of Comparative Theology tell us its legitimate classification?

Again, Darwin tells us in his "Journal" (p. 458) that he visited a tribe of fetish worshippers in Keeling Island. One of their fetishes consisted of a wooden spoon, dressed in doll's clothes; and he avers that it danced "in good time to the song of the children and women." He adds that "it was a most foolish spectacle," but that the Malays firmly "believe in its spiritual movements."

I hope the enemies of the founder of Christian Science will not accuse her of plagiarism when they recall her now notorious spoon fetish. Hers is a metal spoon, silver plated, with her likeness stamped thereon (price, $3.50 each), and her devout worshippers are each expected to purchase one and use it, habitually, for eating soup withal. Her spoon is also invested with great spiritual power and significance, and he who uses it in the spirit of true worship will realize its health-giving potency. His spiritual strength will be renewed. His soup will do him good.

No, the founder of Christian Science is in no proper sense a plagiarist. Fetish worship is common to all primitive peoples of a certain grade of intellectual development. When the conditions and the phenomena are found coexistent in the midst of a high civilization, Science names it "Atavism."

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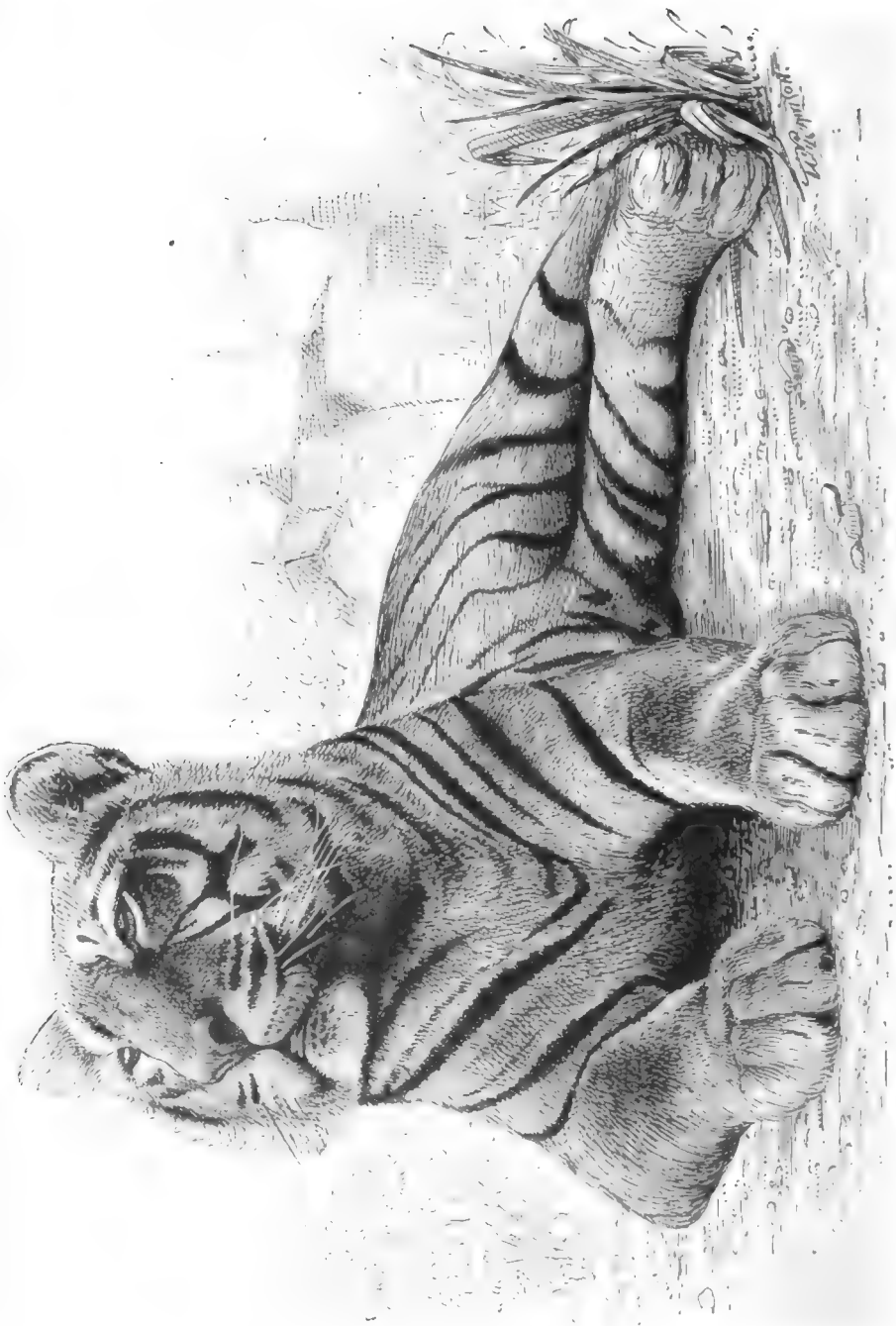

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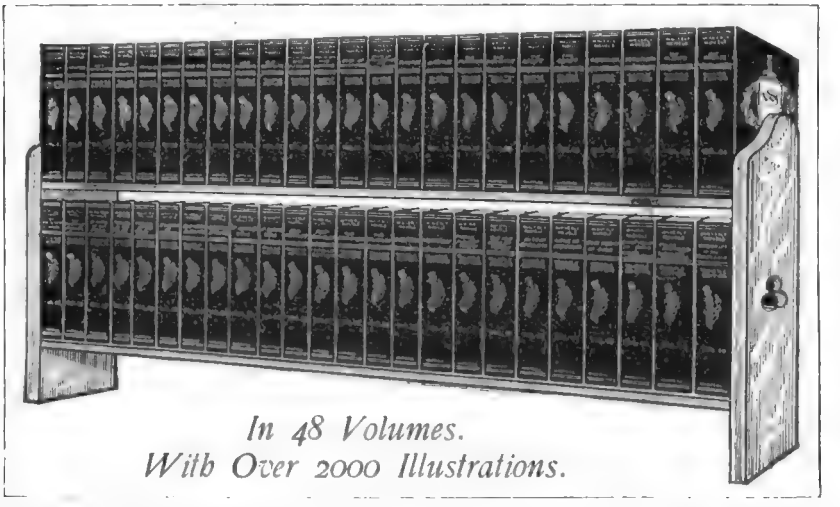

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As it is necessary to be a subscriber in order to take part in these competitions, we will, upon receipt of one dollar, place your name on our subscription list and will send you TRUTH for the remainder of the present year, commencing with the May number.

The names of those who wish to compete must be in this office not later than the First of July.

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For Further Particulars, Address

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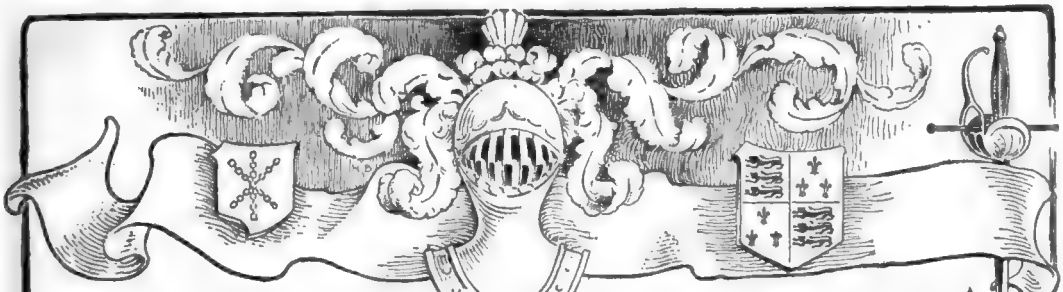

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Nowhere can you find a stock that is richer in suggestion or fuller in variety than this. Long before you ever thought of the warm weather we were planning for you—urging manufacturers, here and abroad, to new and better achievements. Come and see how well we've succeeded—send, if you can't come.

Here is a handful of hints—nothing more—from this vast gathering. The bare prices mask many a bargain:

5c yard—Cotton Crash; 29 inches wide.

8c yard—Seersucker Ginghams; 27 inches wide; stripes only; usually sold at 10c.

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All Imported Swiss Muslins now reduced

$1.25 kinds now 75c and $1; $1.50 kinds now $1.25; $1.65 kinds now $1.25 and $1.35.

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Sale of White

CHEMISES

No. 48. Chemises of cambric, neck and armholes trimmed with hemstitched ruffle, 25c.
No. 49. Chemises of muslin, trimmed with hemstitching, 50c.
No. 50. Chemises of nainsook, trimmed with lace and hemstitching, 75c.
No. 51. Chemises of cambric, trimmed with lace, 35c.
No. 52. Chemis s of lawn, trimmed with lace and ribbon, $1.
No. 53. Chemises of cambric, neck and armholes with lawn ruffles hemstitched, ribbon at neck, 75c.
No. 54. Chemises of lawn, trimmed with lace and ribbon, trimmed skirt, $1.25.
No. 55. Chemises of nainsook, trimmed with embroidery and ribbon, 85c.
When ordering chemises do not omit bust measure.

WHITE PETTICOATS

No. 56. Petticoats of muslin, deep umbrella ruffle of lawn hemstitched, $1.
No. 57. Petticoats of muslin, umbrella ruffle of cambric hemstitched, 50c.
No. 58. Petticoats of muslin, cambric ruffle hemstitched, 75c.
No. 59. Petticoats of cambric, lawn ruffle trimmed with lace, $1.50.
No. 60. Petticoats of muslin, lawn ruffle trimmed with lace, $1.
No. 61. Petticoats of muslin, lawn ruffle trimmed with embroidery, $1.
No. 62. Petticoats of cambric, lawn ruffle trimmed with lace, $2.75.
No. 63. Short petticoats of muslin, cambric ruffle trimmed with lace, 50c.
When ordering white petticoats do not omit length.

DRESSING SACQUES

No. 80. Dressing sacques of fine white lawn, kimona style, finished with white hemstitched fold on collar, down the front, and on the sleeves, tied in front with bow of satin ribbon, $1.25.
No. 81. Dressing sacques of white lawn, full front, fitted back, rolling collar, sacque trimmed with hemstitched lawn ruffle, $1.
No. 82. Dressing sacques of white lawn, full front, with small plaits from neck to bust, fitted back with six small plaits and one large box plait, bell sleeves, rolling collar, trimmed with neat embroidery, 75c.
No. 83. Dressing sacques of white lawn, colored border of light blue, pink or lavender, kimona style, 50c.
No. 84. Dressing sacques of white lawn, full front, fitted back, square neck trimmed with lawn, ruffle edged with lace, trimmed with ribbon, $1.25.
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COLORED PETTICOATS

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No. 65. Petticoats of black mercerized sateen, deep flounce, two rows cording finished with knife-plaited ruffle, $1.
No. 66. Petticoats of seersucker neat blue and white stripes, umbrella ruffle, 50c.

COLORED PETTICOATS

No. 67. Petticoats of black mercerized sateen, ruffle corded, 85c.
No. 68. Petticoats of black mohair, umbrella ruffle with gathered ruffle and velveteen bound, $1.75.
Same style petticoats, with silk ruffle, $2.25.
No. 69. Petticoats of fine quality black mercerized sateen, umbrella ruffle with knife-plaited ruffle, two rows cording and three bias folds above, $2.25.
No. 70. Petticoats of black mercerized sateen, umbrella ruffle with knife-plaited ruffle, cording above, $1.50.
When ordering colored petticoats do not omit length.

SHIRT-WAISTS

No. 85. Shirt-waists of fine white lawn, front and back trimmed with clusters of fine plaits, $1.
No. 86. Shirt-waists of white lawn, sailor collar hemstitched and plaited, shield front plaited, $1.
No. 87. Shirt-waists of percale, white ground with red, blue or black dot, plaited front and back, 85c.
No. 88. Shirt-waists of white lawn, front and back with fine plaits, plaited cuffs, laundered collar, $1.
No. 89. Shirt-waists of striped shirting, new sleeves and band cuffs, 50c.
No. 90. Shirt-waists of white lawn, front and back trimmed with hemstitched plaits, $1.50.
No. 91. Waists of peau de soie, in solid colors, light blue, pink, lavender and black, front trimmed with clusters of fine plaits, unlined, $4.75.
No. 92. Waists of Louisine silk with hemstitch stripe, collar and cuffs trimmed with black velvet ribbon, black, white, pink, light blue, unlined, $4.50.
No. 93. Waists of black China silk, front and back trimmed with clusters of cords, stock collar, $2.75.
No. 94. Shirt-waists of chambray, in light blue and ox-blood, sailor collar and shield front, trimmed with white tucking, $1.50.
When ordering shirt-waists do not omit bust measure.

WRAPPERS

No. 114. Wrappers of white lawn, kimona style, border of solid color light blue, pink or lavender, $1.
No. 115. Wrappers of lawn, white ground with neat figures of light blue, pink or lavender, full front, yoke back with box plait to waist, ruffle over shoulders trimmed with lace and braid, ruffle on skirt, $1.50.
No. 116. Wrappers of white lawn, full front, Watteau back from neck, two ruffles over shoulders trimmed with lace, ruffle on skirt, $2.25.
No. 117. Wrappers of lawn, white ground with small dot of pink, blue or black, white yoke finished with gathered ruffle and trimmed with lace, full front, Watteau plait back, $1.25.
No. 118. Wrappers of percale, light colors, neat figures, yoke front and back finished with ruffle and trimmed with white braid, full front, plaited back, deep flounce on skirt, $1.
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JOHN WANAMAKER ❧ ❧ **NEW YORK**

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Summer

This early Summer Sale of White is waited for by thrifty women all over the United States who love dainty garments. The fresh, pure white pieces are made up in latest and most tasteful manner. The muslins and embroideries are of best character, and the sewing is neat and strong.

Our mail order system can serve you equally well in Florida, Texas or Maine.

Lists of garments, and the special sale prices follow. These prices will likely hold good at least till the middle of June.

NIGHTGOWNS

No. 1. Nightgowns of nainsook, trimmed with embroidery and lawn ruffle hemstitched, $1.
No. 2. Nightgowns of nainsook, trimmed with embroidery and ribbon, $1.50.
No. 3. Nightgowns of cambric, trimmed with embroidery and ribbon, $1.
No. 4. Nightgowns of cambric, Empire style, trimmed with embroidery and ribbon, $1.
No. 5. Nightgowns of cambric, trimmed with lace, hemstitching and ribbon, $1.25.
No. 6. Nightgowns of nainsook, trimmed with lace and ribbon, elbow sleeves, $1.
No. 7. Nightgowns of nainsook, trimmed with hemstitched lawn ruffle and ribbon, 85c.
No. 8. Nightgowns of muslin, yoke trimmed with clusters of plaits, neck and sleeves trimmed with cambric ruffle. Only three to one buyer, 38c.
No. 9 Nightgowns of muslin, yoke with clusters of plaits, neck and sleeves trimmed with lawn ruffle hemstitched, 50c.
No. 10. Nightgowns of muslin, trimmed with em-embroidery, 65c.
No. 11. Nightgowns of cambric, trimmed with embroidery and hemstitching, 85c.
No. 12. Nightgowns of cambric, trimmed with embroidery, 75c.

When ordering nightgowns do not omit neck measure.

CORSET COVERS

No. 13. Corset covers of cambric, trimmed with lace, 35c.
No. 14. Corset covers of soft cambric, trimmed with ribbon, 75c.
No. 15. Corset covers of cambric, trimmed with lace and ribbon, 50c.

CORSET COVERS

No. 16. Corset covers of cambric, trimmed with embroidery and ribbon, 25c.
No. 17. Corset covers of cambric, trimmed with embroidery, 35c.
No. 18. Corset covers of nainsook, trimmed with lawn ruffle hemstitched and ribbon, 50c
No. 19 Corset covers of cambric, trimmed with lace, 30c.
No. 20. Corset covers of cambric, trimmed with neat edge, pearl buttons. Only three to one buyer, 8c.
No. 21 Corset covers of cambric, trimmed with lace and hemstitching, 25c.

When ordering corset covers do not omit bust measure.

DRAWERS

No. 38. Drawers of muslin, open, trimmed with plaits. Three only to one buyer, 15c.
No. 39. Drawers of cambric, deep ruffle hemstitched and plaited, open, 25c.
No. 40. Drawers of cambric, trimmed with hemstitched ruffle and plaits, open 35c.
No. 41. Drawers of cambric, with embroidery and hemstitched plaits, open, 50c.
No. 42. Drawers of cambric, open, trimmed with lace, 65c.
No. 43. Drawers of cambric, trimmed with embroidery, open, $1.
No. 44. Drawers of nainsook, trimmed with embroidery, open, 75c.
No. 45. Drawers of cambric, trimmed with lace, open, 85c.
No. 46. Drawers of muslin, open, trimmed with lace, 50c.
No. 47. Drawers of nainsook, trimmed with embroidery, open, $1.

When ordering drawers do not omit length.

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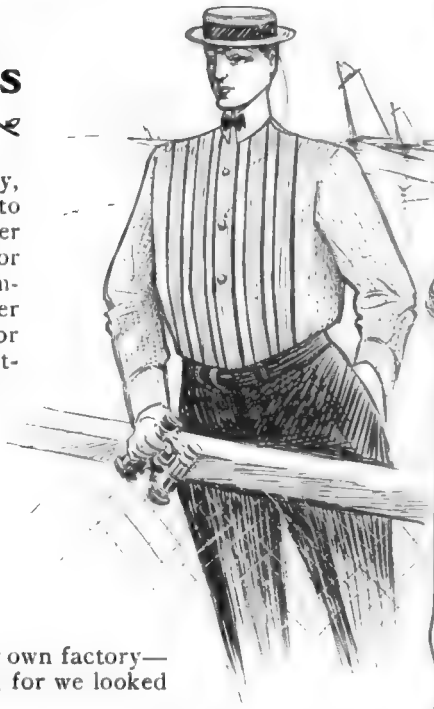
AN ELABORATE SHOWING OF MEN'S NEGLIGÉ SHIRTS



Do your thoughts turn longingly, with the coming of the warm days, to the delights of the negligé shirt? Never have we made greater preparations for your comfort, as to shirts for the Summer Season, than this year. Never has the price-range been wider, nor the gathering of materials and patterns more comprehensive.

We've been at it for many months — picking up choice materials, abroad, for our made-to-order shirts; laboring with manufacturers to give us shirts made as we want them, and as we know you'll like them—well fitting, ample in cut of body and sleeves, and substantially finished.

Some shirts, too, we've made in our own factory—and they're as good as shirts *can* be, for we looked carefully after each detail.

If you prefer your shirts made to your measure, your choice among exclusive fabrics is unlimited; and we'll see to it that you're absolutely satisfied before you take them.

Ready-Made Shirts

At $1, of striped madras, with cuffs detached; white corded madras, with cuffs attached or detached; striped madras, collar and cuffs attached, starched or soft.

At $1.50, of plain striped, white, or black and white madras, or plaited striped madras, with cuffs attached or detached; striped madras, with soft or starched collar and cuffs attached; solid-colored madras, plaited bosom, attached cuffs; striped madras, with the Raglan sleeve, cuffs attached or detached; our own make.
Striped fancy flannel, with collar or neckband; botany flannel (cotton-and-wool), with collar or neckband.

At $2, of striped madras, plain or plaited bosom, cuffs attached or detached; botany flannel, with silk stripe; collar or neckband.

At $2.50, of white corded linen, with Raglan sleeve; cuffs attached; made in our own factory.

At $2.75, of silk-and-cotton, soft cuffs and collar or neckband.

At $5, of natural color linen, with blue or red stripes; Raglan sleeve; cuffs attached.

Made-to-Order Shirts

At $3, of French percale.
At $3.50, of Scotch madras and Scotch cheviot.
At $10, of French linen batiste.
At $12, of French silk, and French thread-and-silk.

JOHN WANAMAKER **NEW YORK**

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The Wanamaker Store

Everything for Out-of-Door Sports

Summer Vacations, Saturday half-holidays, off days out of town—What are you going to do with them? Shall it be canoeing in the Adirondacks, fishing in the Maine Lakes, a leisurely trip with wheel and camera, the golf course, tennis court or diamond?

Whatever may be your individual tastes and needs, and they're sure to be widely diversified, we can consult the one and meet the other in this splendid collection of sporting goods.

Hints of it are at best a mere list of names, but we hope they'll prove suggestive:

Rowboats and Canoes

St. Lawrence River Skiffs, No. 2, 17 ft. long, $68; No. 3, 16 ft. long, $47.50.

Double Ender Rowboats, 15 ft. long, $47.75.

Canvas Covered Dinghies, for yacht tenders, 15 ft. long, $55.

Canvas Paddling Canoes, 16 or 16½ ft. long, Grade A, $35; Grade B, $27.50.

Special Cruising Paddler, Spanish cedar or mahogany, 17 ft. long, $62.50. Sailing outfit, $12.50 extra. Catalogue with full descriptions sent on request.

Golf Supplies

Golf Clubs in complete assortment—"Vardon," Spalding, McGregor, Slazenger, B. G. I. and "Taylor" Clubs, at $1.50 to $2.50, according to make. Also Tice's sectional shaft drivers and brassies, $2.50 and $4, and Nicholl's special clubs, $2 and $2.50. Caddy bags, of canvas, cloth, or leather, $1.50 to $10.

Golf Balls—"Vardon Flyer" and "Ocobo," $3.25 doz.; "Craigpark" and "Musselburgh," $3.05 doz.; "O. K. Silvertown" and Slazenger's L. P. H., $3.50 doz.; "Henley" and "Henley B.," $3.75 doz.; Spalding's "Bramble" and "U.S.G.A.," $3 doz.; the Wanamaker Practice Ball, $2.25 doz. All sorts of golfing sundries.

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The "Orient Mile a Minit," men's, $60; "Orient Leader," $50; the "Tailored Orient," $50; "Orient 1901 Light Roadster," $35.

The "Continental," men's, $22.50; women's, $23.50. The "Continent," men's, $25.

The "Rodman," men's, $18; women's, $19. The "Rodman, Jr.," juvenile wheel, boys' or girls', 24 or 26 in. wheels, $15.50; better grade, 20 in., $17.50; 22 and 24 in., $20; 26 in., $22.50. Catalogues gladly furnished.

Cameras and Supplies

Eastman's Kodaks, 80c to $28; Wizards, $6.50 to $55.50; Korona Cameras, $9 to $30; Bullard, $10 to $45.

Photographic Supplies—Wanamaker developers, liquid, 8 oz. bottles, 20c; powder, package of 6, 20c. Wanamaker's toning and fixing solutions, 8 oz. bottle, to make 24 oz 20c. M. Q. Developer, Nepera's, 15c tube, 75c box of 5; Wanamaker's, 10c tube, 40c box of 5 ubes. Acid Hypo., Nepera's, 15c box; Wanamaker's, 10c box, to make 16 oz. solution. Photographic albums and card mounts in large variety.

Base Ball Goods

Balls, 5c to $1.25; catchers' mitts, 25c to $6; fielders' gloves, 15c to $3; bats, 5c to 75c; catchers' masks, 25c to $2.50; suits, $4.50 to $15.00. Liberal discounts allowed to clubs on orders of nine or more suits.

Lawn Tennis

Rackets, $1 to $8; nets, $1.25 to $5; poles, 75c to $5; guy ropes, 50c set; marking tape, $3 and $3.50; court markers, $2; racket cases, 50c; tennis balls, 25c, 30c, 35c, 40c each; tether-ball poles, $1 each; balls, 75c each.

Fishing Rods, Etc.

Bamboo rods, 75c to $10; salt water rods, 50c to $3.50; reels, 20c to $15; landing nets, 50c to $2.65; tackle books, 50c to $1.75. Full line of hooks, spoons, lines, floats and sinkers.

JOHN WANAMAKER **NEW YORK**

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Chartered 1863. (Stock.) Life, Accident and Employers Liability Insurance.

JAMES G. BATTERSON, President

PAID-UP CAPITAL **$1,000,000.00**

JANUARY 1, 1901.

Total Assets,	**$30,861,030.06**
(Accident Premiums in the hands of Agents not included.)	
TOTAL LIABILITIES (Including Reserves),	26,317,903.25
EXCESS SECURITY to Policy-holders,	$4,543,126.81
SURPLUS,	3,543,126.81
Paid to Policy-holders since 1864,	**$42,643,384.92**
Paid to Policy-holders in 1900,	2,908,464.03
Loaned to Policy-holders on Policies (Life),	1,586,652.20
Life Insurance in Force,	109,019,851.00
GAINS FOR THE YEAR 1900:	
IN ASSETS,	$3,167,819.96
IN INSURANCE IN FORCE (Life Department Only),	8,685,297.06
INCREASE IN RESERVES (Both Departments), (3½% basis)	2,484,392.52
PREMIUMS COLLECTED,	6,890,888.55

Sylvester C. Dunham, Vice-President
John E. Morris, Secretary — J. B. Lewis, M. D., Medical Director and Adjuster
Edward V. Preston, Superintendent of Agencies — Hiram J. Messenger, Actuary

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Guaranteed to Wear

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muslin, fine as linen, soft as silk.

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Everybody's Magazine

Vol. IV. **JUNE, 1901.** **No. 22.**

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The Editors of EVERYBODY'S MAGAZINE wish good short stories dealing in a vital way with American life and affairs; they are always glad to consider any ideas for articles or features of interest: but, while all precautions are taken, they cannot hold themselves responsible for the return of unsolicited manuscripts submitted. In no case will any manuscript be returned which is not accompanied with full return postage.

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WHAT AILS YOUR HAIR?

Upon receipt of this FORM carefully filled out, and enclosing a few hairs, or a sample from the daily combings, we will send you a dainty BOTTLE of Cranitonic Hair Food and a trial cake of Cranitonic Shampoo Scalp Soap by mail prepaid and a diagnosis and complete REPORT upon the condition of your hair after scientific microscopical examination by our Physicians and Bacteriologists, absolutely FREE.

Applicant's Name in full.....

Address in full.....

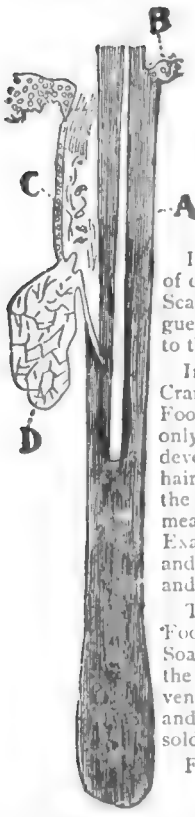
Have you Dandruff?..... *Is the Dandruff Oily or Dry?*.... ...

Is your hair falling out?..... *Losing color?*.....

Does your scalp itch?..... ..... *Any scaly eruptions?* .....

Any eczema on scalp or body? ..... *Occupation*.....*Sex*.....

CRANITONIC HAIR FOOD CO., TEMPLE COURT, NEW YORK.



MICROBES HAVE JUST ATTACKED THIS HAIR

A—The Hair.
B—The Scalp.
C—Microbes.
D—Food Gland.

Hair needs food to keep it alive.

If the roots have been weakened by the attacks of the scalp microbe, your hair falls sick, falls out, turns gray.

A sure sign of "hair disease" is itching and dandruff.

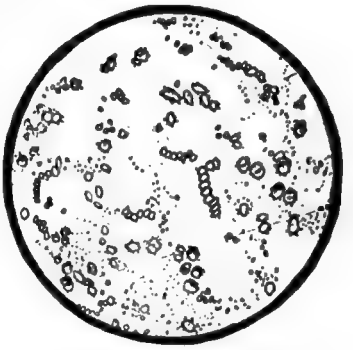
Heretofore the treatment of diseases of the Hair and Scalp has been a matter of guesswork, without regard to the cause.

In the laboratories of the Cranitonic Hair and Scalp Food Co., of New York, the only Institute in America devoted to diseases of the hair and scalp, the cause of the disease is learned by means of a Microscopic Examination of the hair, and a cure effected by exact and scientific methods.

The Cranitonic Hair Food and Shampoo Scalp Soap were formulated for the exact purpose of preventing and curing all hair and scalp diseases, and are sold by druggists.

For purposes of scientific research and investigation, and in the perfection of its formulae, the Cranitonic Hair Food Co. has already expended more than $200,000.

In a microscopical examination of 1,000 different samples of human hair, made in the Cranitonic Hair and Scalp Laboratories and Institute (incorporated under the laws of the State of New York) 24 different diseases of the hair and scalp were discovered, many of them HIGHLY CONTAGIOUS AND ALL FATAL TO THE LIFE OF THE HAIR.



THE DANDRUFF MICROBE

which causes Itching and Dandruff, followed by Falling Hair, and finally Baldness.
From Micro-Photograph by Dr. E. Fahrig, Chief Cranitonic Laboratories.

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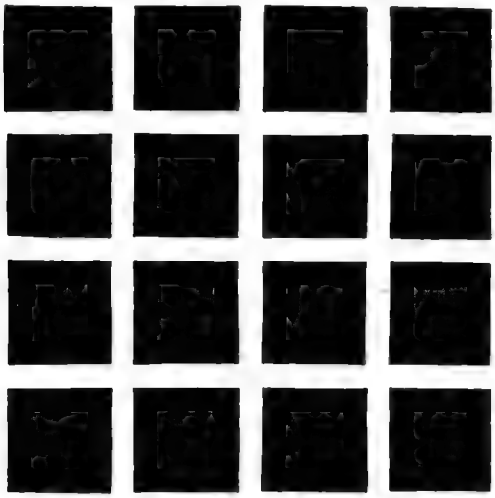
Optical (and other) illusions

Our illustration represents a series of black squares placed at regular distances apart and separated by white bands crossing each other regularly at right angles. In each of the places where the white bands cross we see a very plain shadow with indefinite boundaries. If the attention be fixed on one of these spots in particular it disappears at once, while the neighboring spots persist. Optical illusions are a good deal more than mere amusements. Studied with care, they can do a good deal toward clearing up problems which are still imperfectly understood.



Another illusion

is held by many persons—they still believe that a mattress made of hair is the best for comfort and durability. This is an illusion, pure and simple, as over 200,000 purchasers of our mattress can testify. Hair is a thing of the past. It is unsanitary; it is dirty and attracts vermin. The "Ostermoor" is the best mattress ever made at any price and is not an imitation of anything else. Don't believe any one who says it is "just like this" or "just like that." It is just like nothing but itself. It is not for sale by any store or agent—an Ostermoor mattress can only be bought of OSTERMOOR & Co., direct. Don't be deceived by unscrupulous dealers. Please send for our free, illustrated 72-page book, "The Test of Time," which contains letters from scores of prominent persons who have slept on

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Sleep on it thirty nights, and if it is not even all you have *hoped for*, if you don't believe it to be the equal in cleanliness, durability and comfort of any $50 hair mattress ever made, you can get your money back by return mail—"no questions asked." There will be no unpleasantness about it at all.

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3 feet 6 inches wide, 35 lbs.	-	11.70	
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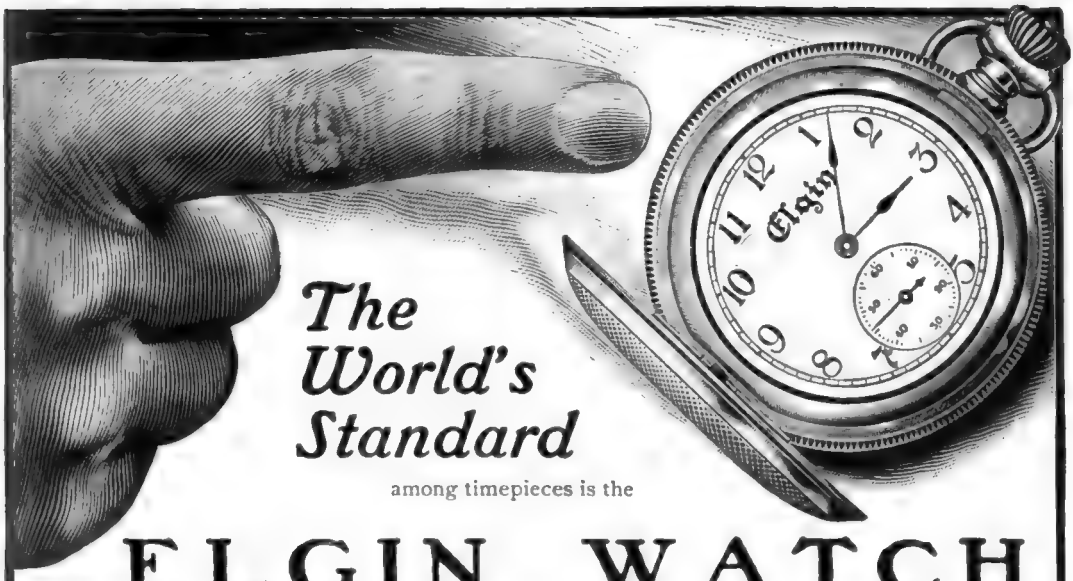

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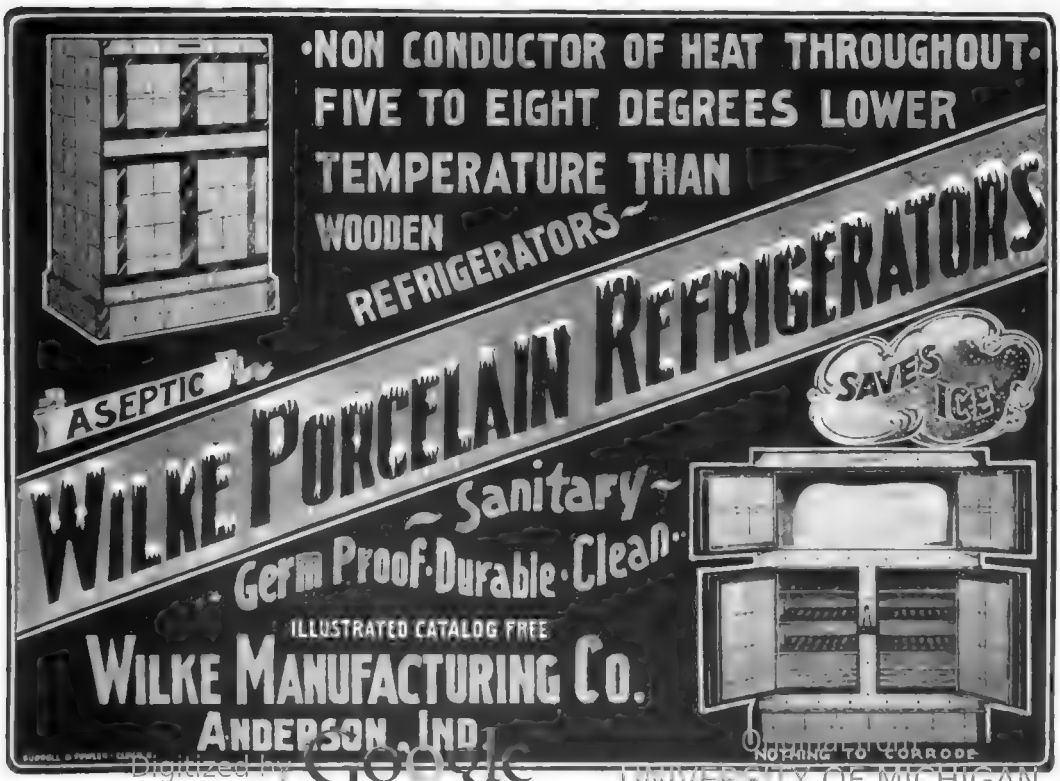

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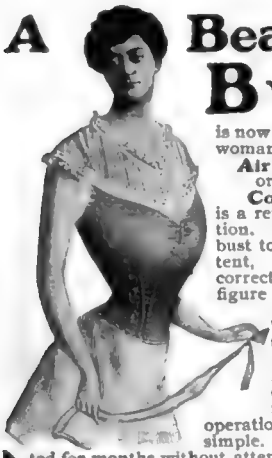

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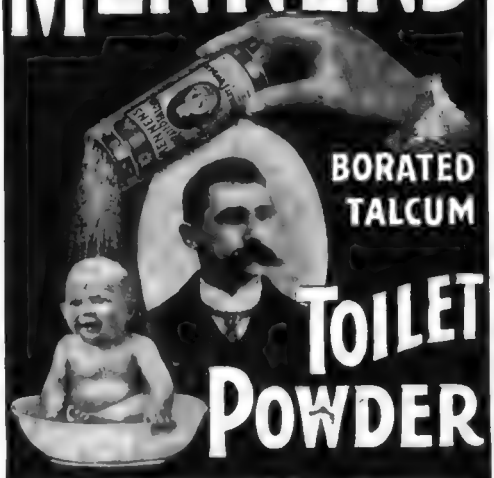
MENNEN'S



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1 " Ginger Ale " "
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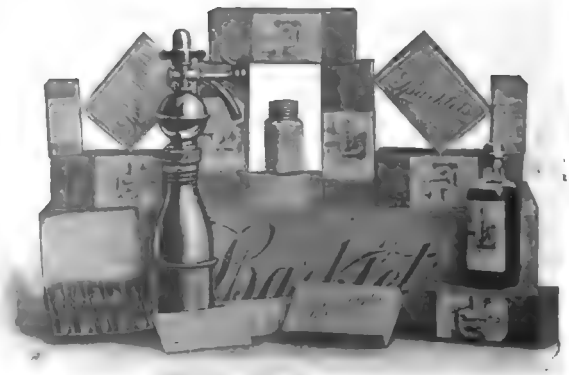

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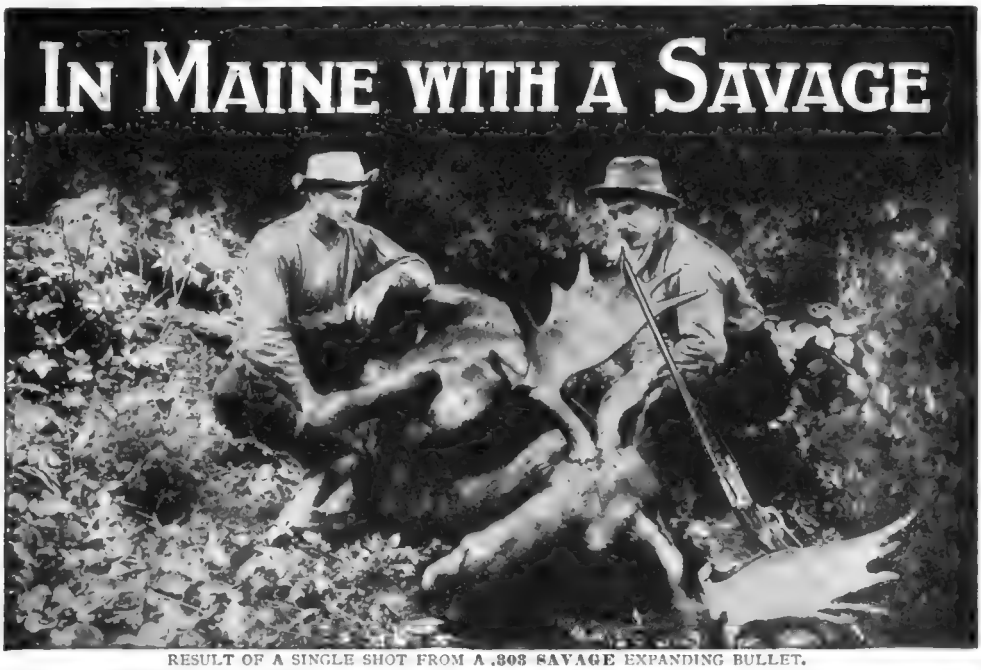
IN MAINE WITH A SAVAGE



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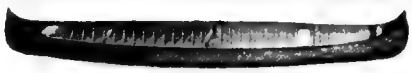

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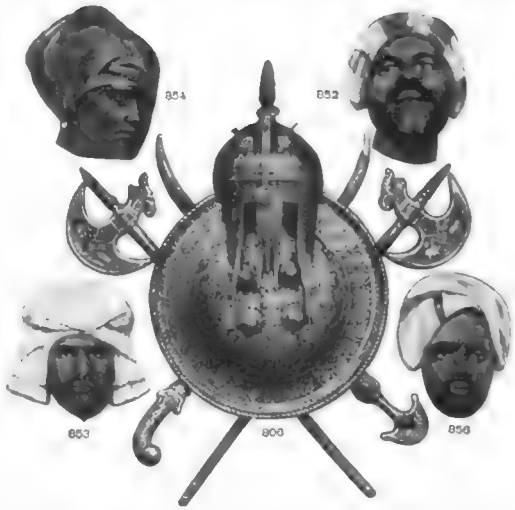

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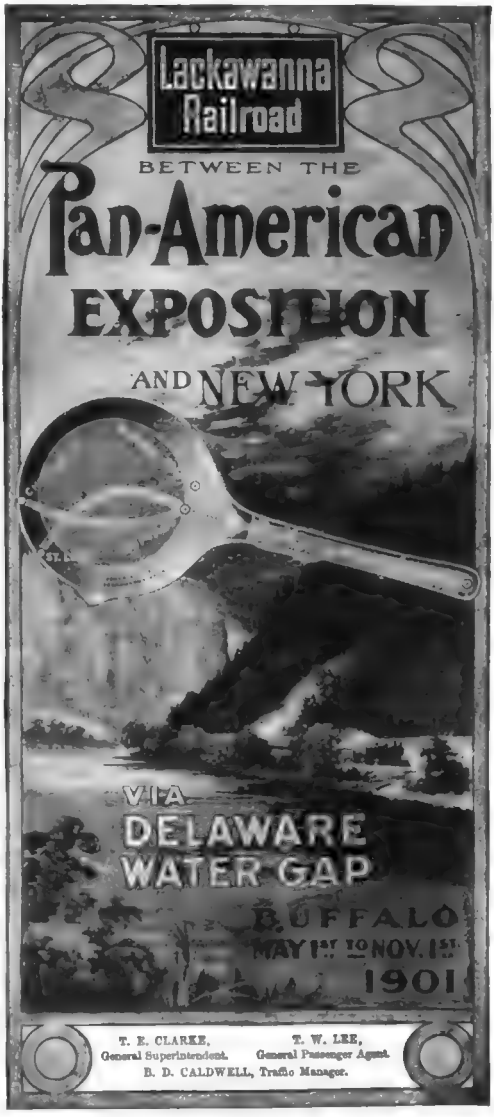

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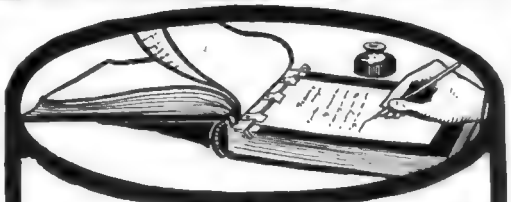

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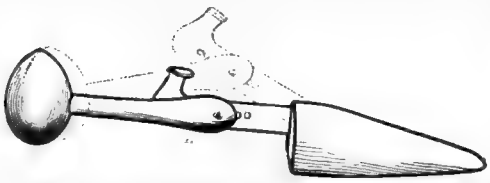

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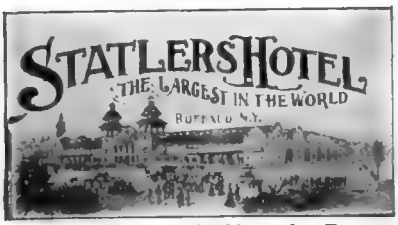

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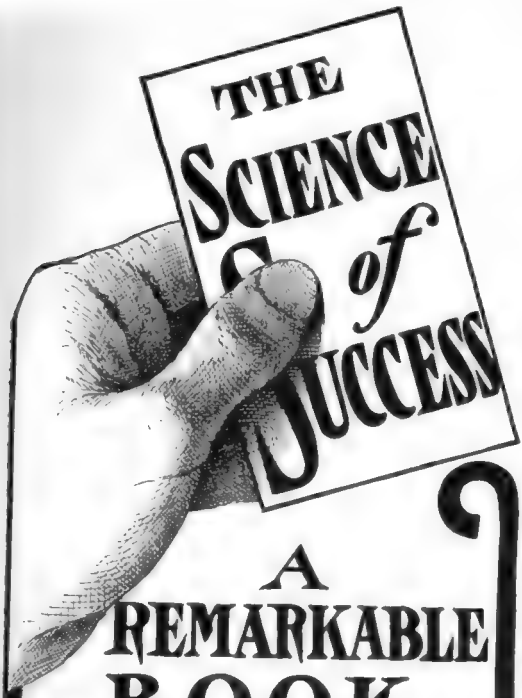

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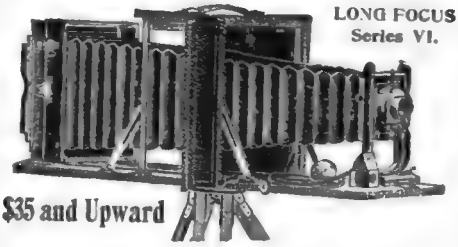

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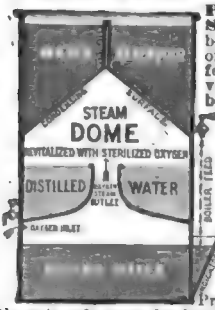

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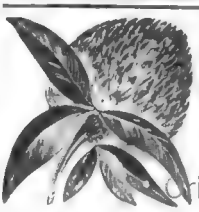

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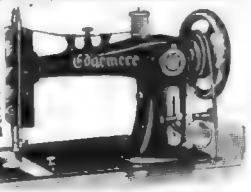

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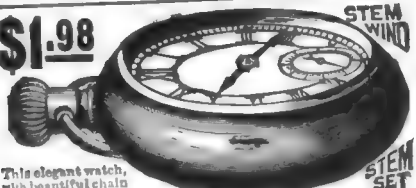

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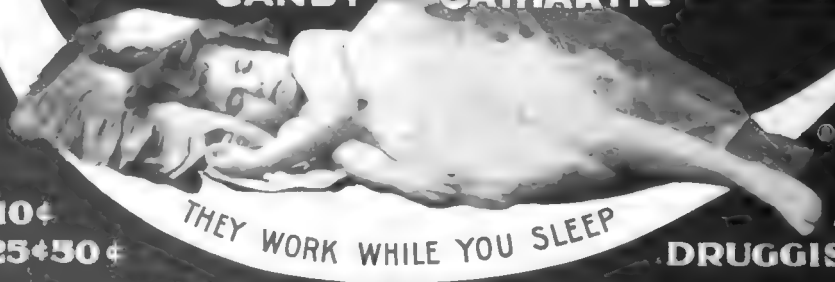

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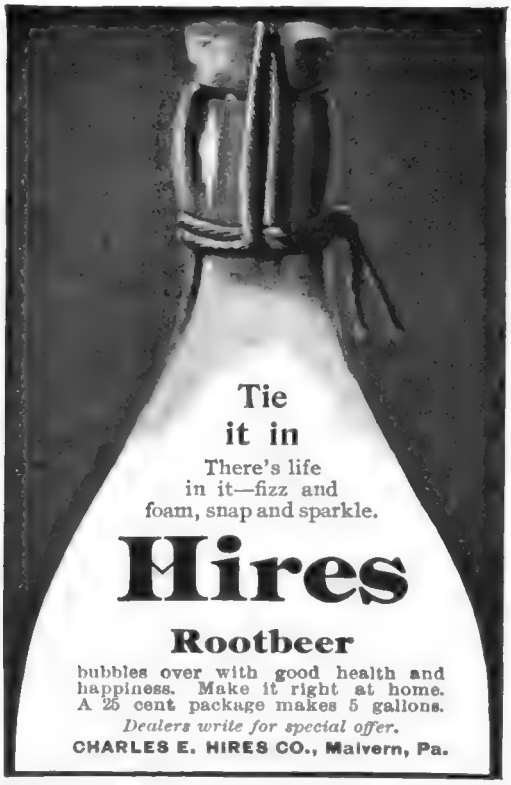

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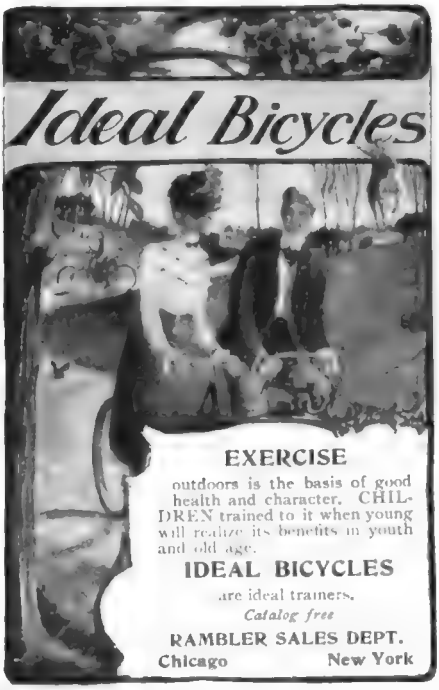

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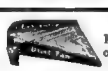

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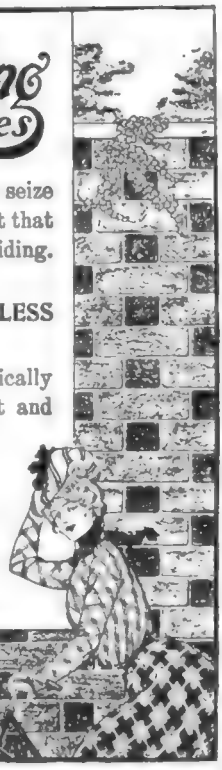

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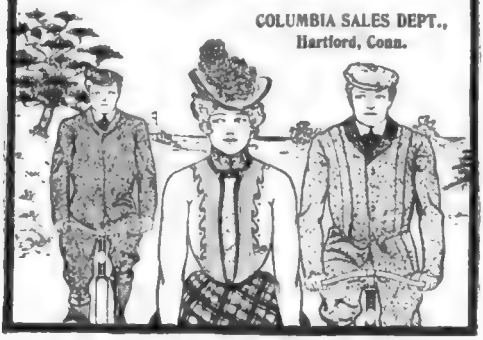

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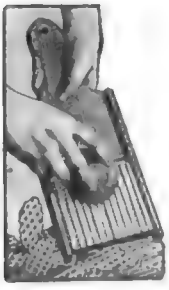

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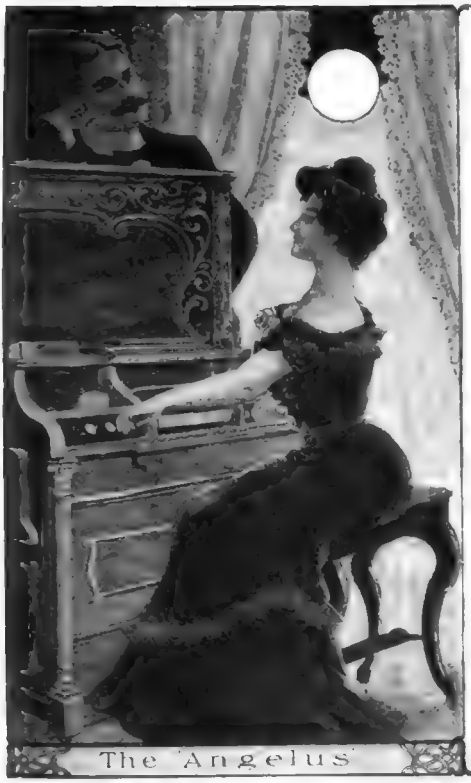
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Consumption, Catarrh, Bronchitis and Weak Lungs Cured by His Marvelous Treatment.

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Dr. Slocum's success in curing consumption and all diseases of the head, lungs and bronchial tubes has been the subject of wide comment throughout the country.

That he has completely mastered the consumptive bacilli is generally admitted.

Hundreds of letters are being received daily from every State, proving the great value of the Slocum System—testimony that comes from leading citizens in such a way as to leave no room for doubt.

Every reader of EVERYBODY'S MAGAZINE who suffers owes a duty to health and posterity, the performance of which means a speedy trial of Dr. Slocum's four preparations, which are free on request.

Every weak and emaciated person needs the Slocum System to strengthen and produce flesh.

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DR. T. A. SLOCUM,

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Yours respectfully, M. T. BOOKER.

SYCAMORE, Ga.
Feb. 13, 1901.

DR. T. A. SLOCUM,

DEAR SIR:—My delay in reporting to you the effect of your wonderful remedies was prompted by the desire to ascertain whether the results would be permanent, and am now thoroughly convinced that your Remedies are all that you have claimed. My wife has been losing strength and flesh for about twelve months. She has taken your Remedies and gained several pounds. I will gladly recommend your medicine to my friends. Please accept thanks for your kindness in sending the Remedies, and if I need any more of your medicine I will send to you for it.

Respectfully, J. W. WHIDDON.

WRITE NOW.

If you want to get well quickly, ***write Dr. T. A. Slocum, 96 and 98 Pine Street, New York, giving your full address,*** and he will at once send you the full free course treatment fresh from his great laboratories. Remember, he charges you nothing for the treatment, and only asks your commendation to others after being cured. Please mention EVERYBODY'S MAGAZINE when writing the Doctor.

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The numbers of paid admissions to previous expositions were:—Paris, 1878,—12,263,847; Paris, 1883,—28,149,353; Chicago, 1893,—21,447,212; Omaha, 1898,—1,778,250. If you can guess anywhere near the correct number, you have a chance of sharing in the following offer of

$500.00 Cash Reward!

For the nearest correct guess of the number of paid admissions to the Pan-American Exposition, we will pay a **cash prize** of **$100**

For the Second nearest correct guess, a **cash prize** of **$75**

For the Third nearest correct guess, a **cash prize** of **$50**

For the Fourth nearest correct guess, a **cash prize** of **$25**

For the next 10 nearest correct guesses, a **cash prize** to each of **$10**

For the next 20 nearest correct guesses, a **cash prize** to each of **$5**

For the next 50 nearest correct guesses, a **cash prize** to each of **$1**

84 Cash Prizes, amounting in all to $500.00.

The Contest will be decided as follows: The Hon. William J. Buchanan, Director-General of the Exposition, has written us that he will, at the close of the Exposition, furnish us a certified statement of the number of paid admissions. This statement and all guessing coupons will be turned over to a committee, composed of the following eminent gentlemen: Hon. Thomas Butler, Member of Congress from the Sixth Pennsylvania District; Mr. H. N. McKinney, of the N. W. Ayer & Son Advertising Agency, Philadelphia, and Mr. E. Pusey Passmore, Cashier of the National Bank of Avondale, Pa. These gentlemen will decide the contest and award the prizes. The names of the winners, their addresses, and the numbers guessed, will be published in "Success with Flowers."

Guesses may be registered from now until the close of the Exposition on October 31. Guesses bearing post-mark later than this date will not be eligible. If more than one person guesses winning number, money will be equally divided

The only condition attached to this contest is that each person registering a guess must send either 25 cents, 40 cents or 50 cents for a year's subscription (see special offer below) to **"SUCCESS WITH FLOWERS,"** the only magazine published in the United States *entirely* devoted to floriculture. It tells amateurs how to grow and care for their house or garden plants. It answers all questions pertaining to this subject. It is published monthly, and has 32 pages magazine size. It costs but a small sum. It is worth much more.

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To every person sending us 50 cents for a year's subscription, or 40 cents in clubs of 5 (see special offer below), we will send free of all cost the following collection of summer-flowering bulbs. Sure to grow and bloom. They will produce quantities of flowers for you. They represent a whole flower garden in themselves. Do not miss this grand opportunity. Remember, this collection is absolutely free, and will be sent postpaid to any address in the U. S., Canada or Mexico.

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1 **Ever-Blooming Canna.** We shall send a new variety, which will attract attention in any yard.

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1 **Giant Yellow Amaryllis.**—A superb thing; recently sold at 40 cents each. New color. Magnificent.

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2 **Giant Golden Sacred Lilies.**—Large and sweet. Blooms quickly either in soil, sand or pebbles and water.

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Special Offer.—Send us five yearly subscriptions, including your own, at **40 cents each,** and we will send each subscriber the premium collection of 20 flowers, and each one may register one guess in the Pan-American Contest. **To pay you for your trouble,** you may register five guesses, and in addition to your premium collection, we will send you, as a **special premium, a handsome plant free.**

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Our property is improved in exact accordance with City Specifications. Streets 60, 80 and 100 feet wide, built to city grade, bordered on each side by 5 foot granolithic cementine walks, flower beds and shrubbery, city water, gas, etc., all at our expense. For $10 down, and $6 per month until paid for, we sell you a regular New York City lot, subject to the following guarantees from us:

If, at the expiration of the year 1901, this lot is not worth $500, based on the price at which our salesmen will then be selling similar lots, we will refund all of the money you have paid us, with 6 per cent. interest additional.

If you should die at any time before payments have been completed, we will give to your heirs a deed to the lot without further cost.

If you should get out of employment or be sick, you will not forfeit the land.

Titles are guaranteed to us by the Title Guarantee & Trust Co. of New York.

You will note three distinct points of advantage in this proposition. First, it is a Life Insurance for your family. Second, it enables you to pay in small sums as you would in your savings bank, and cannot cramp you; and, Third, it enables you to participate in the great growth of values in New York real estate, which are due to natural conditions; furthermore, the three advantages are absolutely without risk.

OUR GUARANTEE OF INCREASE.

Our guarantee of 25 per cent. increase in one year in the value of lots is a simple one and should not be misunderstood or misconstrued. It means, that the regular prices publicly marked on our property (every unsold lot being plainly tagged and priced), and at which our large corps of salesmen will be then selling these lots for ourselves and our customers, will be 25 per cent. in excess of the prices at which we now offer them.

IT DOES NOT MEAN, that we can or will assume the responsibility of selling customers' lots except incidental to our business of development, or that we will take them off their hands; this obviously would be impossible in the great work of development we are undertaking. This is intended as a straight business agreement of an honest increase in value, and that only.

N. B.—Our Non-Forfeiture Agreement prevents the loss of your lot through misfortune.

FREE TRIP TO NEW YORK.

As a further guarantee of good faith, we agree with all persons, living East of Chicago, to pay you in cash the cost of your railroad fare to New York and return, if you visit our property and find one word of this advertisement a misrepresentation; or, *in case you buy, to credit cost of your railroad fare on your purchase;* to those living farther away than Chicago, we will pay that proportion equal to cost of fare to Chicago and return. We would advise you, if you are satisfied, to send first payment, $10 in cash, at our risk, immediately, and we will select the very best available lot for you. Or, if you desire further particulars, to write immediately for maps, details and information. It will cost you nothing to find out and thoroughly satisfy yourself—we solicit closest investigation. References by hundreds—our reputation is national.

MAKE OUR OFFICES YOUR HEADQUARTERS.

A cordial invitation is extended to all strangers to make their headquarters with us when they come to New York City. Our offices occupy 9 rooms—nearly the entire 6th floor of the handsome Home Life Building, opposite City Hall. One of these rooms is fitted up expressly as a library and rest room for the convenience and comfort of our out-of-town customers, or any other visitors to New York, to whom we can be of service. It is equipped with the latest magazines, books, writing materials, etc. Have your mail directed in our care, drop in for rest, letter-writing, package-checking, directions about the city, or any desired information. All are welcome at any time. Lady's maid in attendance.

Wood, Harmon & Co., DEPT. 113, 256-257 Broadway, New York.

NOTE OUR REFERENCES.

The Commercial Agencies, 20 National Banks, and 30,000 customers all over the United States. The following is but one of thousands on file from banks, public officials, and appreciative customers:

"*There is no doubt the property offered by Wood, Harmon & Co. in the Twenty-ninth Ward, represents one of the best investments a man of limited income can possibly make within the corporate limits of Greater New York. It can be said without hesitancy that Wood, Harmon & Co. are perfectly reliable and are worthy the fullest confidence of the investor, whether he resides in Greater New York or any other section of the United States.*

"*THE NASSAU NATIONAL BANK OF BROOKLYN.*"

Corner of Utica Avenue and Eastern Parkway, Brooklyn. Lots here —within five minutes of Rugby, on same avenue and trolley line—are $1,500 to $2,500. RUGBY LOTS, $420.

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EVERYBODY'S ADVERTISEMENTS

$10 Secures $420 Lot In Greater New York.

Greater New York Map.
AN OBJECT LESSON.

IT TELLS ITS OWN STORY
and shows the immense possibilities of Greater New York's real estate values.

YOUR ROUND TRIP TO NEW YORK FREE.

This Map will convince every thinking man and woman in America that our announcement embodies a proposition never equalled in the history of this country and one which, in the very nature of New York's present conditions, and the limited area of Brooklyn itself, can never again occur.

NOTE THE MARVELOUS COMPARISON! Lots at 100th Street, $20,000 to $75,000 each; *Lots at Rugby, $420.* The same distance; the same running time; the same street-car fare (5 cents); the same city government, schools, police and fire protection. What creates the difference? Simply this: that before Consolidation, Brooklyn had a provincial government and wretched transportation facilities. Consolidation into one city government and equal transportation facilities existing to-day MUST ultimately equalize the value of property equally accessible. *This is an axiom—a self-evident truth.*

No such opportunity since New York began its wonderful growth as a world metropolis. The Astors, even, had no such combination of circumstances to operate in their behalf, as two years have accomplished greater changes than a decade did in those days. Every lot is guaranteed to increase 25 per cent. during the first year—an increase equalling your first year's payments—and $2,000,000 insures your purchase.

Wood, Harmon & Co., the largest, most responsible, and most successful Real Estate Company in the world, are so positive that the values of their lots will increase 25 per cent. during the year 1901 that they will guarantee this increase to any investor, and in case they cannot show it they agree to return all money paid them, with 6 per cent. interest. *This guarantee, however, should not be misunderstood and is fully explained below.*

We have one of the grandest opportunities of a lifetime for the small investor to make money—we give as good security as the strongest savings bank, and, instead of the 4 per cent. interest on deposits, we can guarantee over 25 per cent. We thoroughly believe the lot which we now sell for $420 will in 10 years bring $4,000, in 20 years from $20,000 upwards. If you will carefully study this communication, you will see our reasons.

Our wealthiest families like the Astors have made their money from the increase in value of New York real estate. New York City property has increased in value more than that of any other place in the world, because of its immense growth in population; and this growth is still going on—in fact, at the present time we are starting on a new and greater era than ever before known in New York's history. Let us see:

New York City, as every one knows, is crowded to the bursting point. Since the consolidation of New York and Brooklyn, the increased facilities of rapid transit by bridge, trolley, and elevated have turned the immense tide of increased population Brooklynward. The public have been quick to recognize this as the only and the perfect solution of their problem, and Brooklyn is receiving a tremendous influx from overcrowded New York City. As a result, Brooklyn Bridge has been so severely taxed that new bridges are being built (one of which is nearly completed), and tunnels are being dug beneath the East River. Not only is Brooklyn Borough the only section in which New York can grow, but property in Old New York City the same distance from City Hall (as our map clearly shows) would cost 20 to 100 times the money.

WHY WE INVESTED HERE.

As Real Estate is our business, we study the conditions existing or possible in the various cities of the United States. We have aided in the development of 25 of these cities, and have opened 75 distinct properties. After carefully studying New York 12 years before purchase, we, in 1898, saw the immense possible advancement in values, and before the consolidation of New York and Brooklyn—before the Rapid Transit had made Brooklyn so accessible—we bought 1,100 acres of the choicest land in Brooklyn, which is now in the heart of that Borough, only 3½ miles from Brooklyn Bridge, and only 35 minutes from New York City Hall. We invested over $2,000,000 in this land, and are developing our properties in the most beautiful manner of any about New York. The growth of the city, together with our improvements, has increased the value of this property over 25 per cent. since a year ago, and we feel so sure that the increase will be at least the same that we assume the risk of guaranteeing it for the next year.

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NO MONEY NEEDED.

100-Presents FREE to BOYS-GIRLS-LADIES.

WE TRUST YOU.

Our new **FLORENTINE BUTTERFLY HANDY PIN** is a new and handsome pin that should sell easily at 25c. each. Our price is only **10cts. each.** Elegantly finished in 14k gold plate with settings of genuine imported stones. **It is a world-beater** and sells at sight. Sell 20 at 10cts. each and select your present. **NO MONEY NEEDED.** Ladies can sell these as well as boys and girls. One half hour's work will earn a premium. Send name and address and we send 20 Pins **FREE** with full instructions and our **New Illustrated Premium List** showing over 100 presents. When sold send us the $2.00 and we send you the present you select and have earned. If preferred we will pay cash commission. Address, **CHAMPION SUPPLY CO., 46 State St., Dept. 125, CHICAGO.**

RALSTON STILL

Over 20,000 sold.
Not a dissatisfied Customer.

Employs the improved New-Process Distillation, fully explained in booklet "H." Furnishes the family with a choice quality of

Pure Sparkling Water

re-oxygenated with Sterilized, Purified air. Easy to operate, easy to clean. Oldest exclusive water-still manufacturers in the world. All goods fully guaranteed.

THE A. R. BAILEY MFG. CO.,
4 Cedar Street, - - New York.

$19.30 FOR THIS FINE STAFFORD DESK

50 in. long 30 in. wide

quarter sawed oak front, oak throughout, letter files, blank drawers, document file, pigeon hole boxes, extension slides, letter holders and drops. Large, complete, attractive and convenient.

Desks $10 and up.

Can furnish your Office or Home throughout at FACTORY PRICES.

Catalog No. 149, Office Furniture.
Catalog No. 150, House Furniture.

E. H. STAFFORD & BRO., Steinway Hall, Chicago

1000 WASHERS FREE

We will send to first 1000 persons answering this advertisement 1000 of our celebrated "1900" Ball-Bearing Washers on 30 days' trial, freight paid, absolutely without deposit or advance payment. Easiest, most perfect, highest grade family washer. Saves labor, time, money. No rubbing, no tearing. "1900" WASHER CO., 346 State St., Binghamton, N.Y.

BEST BICYCLES MADE

800 New Guaranteed High Grade 1900 Models..... **$8 to $10**

300 Second Hand Bicycles, good as new, $5 to $8.

GREAT REMOVAL SALE.

1901 Latest Models Handsome and Perfect... **$10 to $16**

We ship everywhere for 10 Days Trial without a cent.

One Agent in every town in America can get a wheel to ride **FREE.** Write today.

NEW VICTOR MFG. & SUPPLY CO. Dept. B11, Chicago.

Corns Cured Free

ALLEN'S ANTISEPTIC CORN PLASTER *cures corns.* To prove it I will mail *free plaster* to any one. Send name and address—no money.

GEORGE M. DORRANCE, 232 Fulton Street, New York.

HUNTING CASE GENTS OR LADIES SIZE

This ELEGANT Watch $3.75

Before you buy a watch cut this out and send to us with your name and address, and we will send you by express for examination a handsome **WATCH AND CHAIN C. O. D. $3.75.** Double hunting case beautifully engraved, stem wind and stem set, fitted with richly jeweled movement and guaranteed a correct timekeeper, with long Gold plated chain for Ladies or vest chain for Gents. If you consider it equal to any $35.00 GOLD FILLED WATCH Warranted 20 YEARS pay the express agent $3.75 and it is yours. Our 20 year guarantee sent with each watch. Mention if you want Gents' or Ladies' size. Address **H. FARBER & CO., 28 Quincy St., CHICAGO.**

FREE

Up to Date 1901 Catalogue of Watches at Lowest Prices.

To FAT PEOPLE

I know you want to reduce your weight, but probably you think it impossible or are afraid the remedy is worse than the disease. Now let me tell you that not only can the obesity be reduced in a short time, but your face, form and complexion will be improved, and in health you will be wonderfully benefited. I am a regular practicing physician, having made a specialty of this subject. Here is what I will do for you. First, I send you a blank to fill out. When it comes, I forward a five weeks' treatment. You make no radical change in your food, but eat as much or as often as you please. No bandages or tight lacing. No harmful drugs nor sickening pills. The treatment can be taken privately. You will lose from 2 to 7 pounds weekly, according to age and condition of body. At the end of five weeks you are to report to me and I will send further treatment. When you have reduced your flesh to the desired weight, you can retain it. You will not become stout again. Your face and figure will be well shaped, your skin will be clear and handsome; you will feel 10 to 20 years younger. Ailment of the heart and other vital organs will be cured. Double chin, heavy abdomen, flabby cheeks and other disagreeable evidences of obesity are remedied speedily. All patients receive my personal attention, whether being treated by mail or in person; all correspondence is strictly confidential. Treatment for either sex. Plain sealed envelopes and packages sent. Distance makes no difference. Satisfaction guaranteed. Send for my new pamphlet—it will convince you. Mention EVERYBODY'S MAGAZINE Address

HENRY C. BRADFORD, M. D., 24 East 23d Street, New York.

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at a slight cost of maintenance.

With my portable electric fan outfit (including a bottle of lavender salts) a fragrant current of air is ever at command, assuring **restful sleep** at night and **invigorating** the **body** for mental or physical toil during the day.

This outfit (No. 7) consists of an Electric Motor and six-inch Fan complete (see cut), two carbons, two zincs, connectors, six feet of flexible wire, bottle of lavender salts, formula and explicit directions. Delivered safely, charges prepaid, to any part of Canada or U. S. A. for **$2.00.**

I will return money, less express charges, to any purchaser not satisfied.

This outfit is not a toy, but **is practical** and will please the most fastidious.

PRICE OF MOTOR, $1.00.

My little book, "ELECTRIC LIGHT HOME," which teaches electricity, is in its *fifth edition*, and will be **mailed for 10c.**

JAS. H. MASON,

Established 1886. **Dept. 6, 150 Nassau St., New York City.**

A match—a second—a cent.

A HOT BATH

INSTANTLY IN

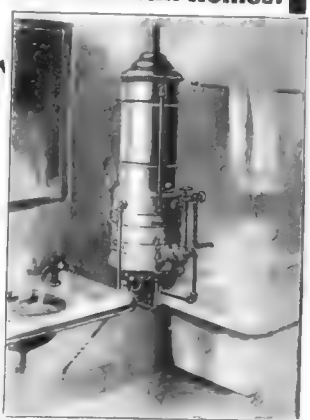
City, Country and Suburban Homes.

The **Humphrey**

CRESCENT

Instantaneous

Water Heater



when once installed in your bathroom will prove a boon, a

Convenience and of Great Economy.

The **Crescent** is made for use of either **gas** or **gasoline**, and provides the luxury of a hot bath **instantly.**

Heats cold water to any desired temperature in unlimited quantities in the shortest possible time at lowest cost.

We will be glad to send you fullest particulars, on application, explaining its simple mechanical construction, together with price list and illustrated book, "**How the Millions Have Bathed.**" Address,

HUMPHREY MFG. & PLATING CO., Kalamazoo, Mich, U. S. A.

GRECIAN BUST GIRDLE

"CORSET REST"

For Negligee, Physical Culture, Golfing, Tennis, Athletics, Corpulency, Maternity,

and all wear in which freedom of motion is desired. A perfect bust support and back-brace. Retains natural position of the bust. Supports skirts and hose. Permits free action of every muscle. Laundries. Endorsed by thousands.

Bust measures, 30 to 50 inches.

Style 64—White, drab and black sateen
Style 72—White, fine imported batiste
Style 40—White, fine summer net

$1.50 Postpaid

CLASSIC CORSET CO.,
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PRESIDENT SUSPENDER

IN ACTION

See how it works. Feel how comfortable it is under all circumstances. The only suspender made that adjusts itself to every bend of the body. Buckles will not rust. Avoid imitations. Get the genuine, with the word "President" on the buckles, even if you have to go across the way for it. Every pair guaranteed. For sale everywhere, or by mail 50c.

C. A. EDGARTON, MFG. COMPANY
Box 263, Shirley, Mass.

Our Business is to make Folks Comfortable.

For Invalids — **Rolling and Carrying Chairs.** The case of invalidism does not exist for which we cannot furnish a suitable chair—over 70 styles. Catalogue B. Invalids' Lifts, Invalids' Beds, Bedside Tables, Bed Trays, Back Rests, Leg Rests, Head Rests, Commodes, etc. Catalogue A.

For Comfort Lovers — **Reclining and Easy Chairs,** over 20 different kinds, meeting every demand for necessity or luxury. Catalogue C.

For Brain Workers — **Sargent's Economic System of Devices,** embracing every sort of device that is helpful to writers and readers, such as Reading Desks that are attachable to chairs, Reading, Dictionary, Atlas Stands, etc., and Sargent's famous Ball-Bearing Rotary Book Cases. Catalogue D.

In writing for information be explicit. **No charge for catalogues.**

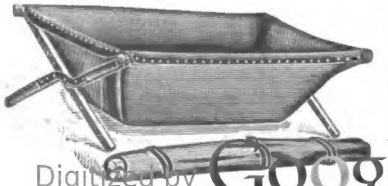
Geo. F. Sargent Co., 289 N Fourth Ave., next 23d St., New York.

Two 50c Scarfs for Fifty Cents

Fashion and common sense have struck partnership in the "TWAIN." One necktie in reality—Two in utility. One side is plain—the other has a handsome contrasting stripe running through. The "properest" caper. At any store that sells neckwear, or send 50 cents (mentioning dealer's name) to

LOUIS AUERBACH, Manufacturer
836-838 Broadway, NEW YORK, Dep't F
Only the GENUINE Twain bears above Earmark

GOLD MEDAL FOLDING BATH TUB.



This Bath Tub is made of a very fine quality of rubbered duck; will last ten years; we guarantee it for two. Made in different sizes to suit. Our Hospital Tub is 6 feet long; other tubs are 5 feet to 5 feet 6 inches long, and when folded weigh 16 pounds and are 5 feet long by 4 in. x 5 in. Strong enough to support the heaviest person, and a pail of water makes a bath. Physicians are recommending them. Price $7.50, delivered.

We also manufacture Infant Bath Tubs and a full line of folding furniture, including the celebrated

GOLD MEDAL FOLDING FURNITURE.

Folding Camp Beds, Cots, Settees, Tables and Chairs in great variety. Send for interesting free catalog.

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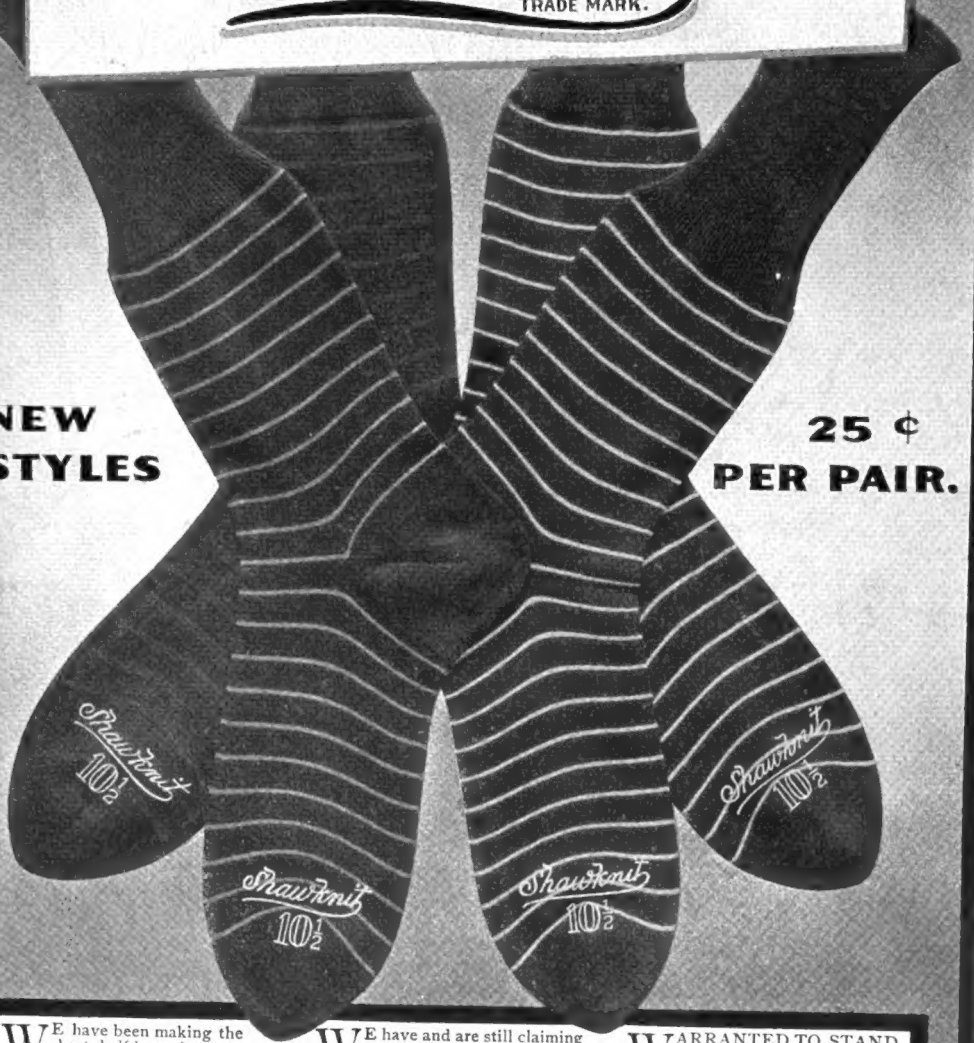

NEW STYLES

25 ¢ PER PAIR.

WE have been making the best half hose for men for over quarter of a century.

WE have and are still claiming more for the Shawknit products than other manufacturers dare to claim — why?

WARRANTED TO STAND ACID TEST.

Shawknits—wear longer than any foreign or domestic hose made.
Shawknits—do NOT stretch, pull, or lose their shape.
Shawknits—do NOT crock, run, or lose their color.

Our Latest Styles—B 9, Black ground, narrow white stripes.
B 10, Black ground, narrow heliotrope stripes.
B 11, Cardinal ground, narrow white stripes.
B 12, Cardinal ground, narrow black stripes.

Medium weight, fine gauge, cotton half hose, sizes 9 to 11 1-2, 25 cents per pair, or six pair $1.50; postage paid upon receipt of price. Ask your dealer for them. Catalogue free showing colors, gauges, and price list.

THE SHAW STOCKING CO., 70 SHAW STREET, LOWELL, MASS.

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Stands for all that is Best in Photography

To the perfection of Kodak construction, to the perfection of the Kodak mechanism, to the perfection of the Kodak lenses, is due the

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All Kodaks Load in Daylight with our Transparent Film Cartridges. Several styles use either films or plates. Sixty-four page catalogue, describing them in detail, free at the Kodak dealers or by mail.

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